Chapter 1

Overarching Statement

Activist Professional-Led Educational Change
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i. Introduction

Educational change requires the introduction of new ideas, artefacts, procedures or processes. Innovation demands both initiative and originality. Its aim is to develop and promote change aimed at improving curricula, teaching and learning and the institutional framework in which the change occurs (Smith 2003). Extensive research has demonstrated the historical resistance to fundamental change in existing patterns of school organisation and traditions of classroom teaching and learning. (Fullan 1993). In part this is because schools also serve as powerful discourse communities that enculturate participants (students, teachers, administrators) into traditional school activities and ways of thinking (Hargreaves, 1994, Putnam 2000).

Successful professionally-led educational change will generate new discourses in professional context and culture. Such professionally-led change will generate new spaces for the co-construction of professional knowledge. In such spaces the professional learners

...construct their own individual representations of learning that is the result of interactions that have taken place in social contexts... and become more expert participants in a community of learners .... with deep engagement ....in collaboration with others in authentic learning tasks that employ the tools and artefacts necessary... leading to reflection, increasing self-management and regulation on the learning contexts that the professional constructs...

(Smith 2003:2)
Theorists of educational change claim professional transformations occur in communities of practice that follow shared meanings and negotiated procedures (Palincsar, Magnusson, Marano, Ford and Brown 1998). This may also occur in learning organisations which develop principles and processes that support education change (Senge 1990).

Professionals who lead change have a sophisticated knowledge of the culture of professional contexts. They often utilise subtle ways of making responsible choices, and through experience in the nature and range of professional situations and also through ethical and professional concern for clients, they develop deep insights about the cultural, social and personal impact of professional practice. Such professionals are 'activists'.

In particular, activist professionals develop deep knowledge and expertise about innovations in practice and about how to lead change. For activist professionals, innovations are properly researched and evaluated. For activist professionals educational change is reflexive and concerned with the political and ethical issues transformation implies. Inevitably, reflections about educational change and renewal lead to concerns about the problems of initial and continuing professional development of practitioners in the field (Sachs 2003)

II. Leading Professional Change: The Core Research Issues

The research papers in this portfolio have a definitive purpose: to refine and elaborate the relationships between activist professionalism and leading educational change. According to Sachs (2003:1)
For an activists teaching profession to be developed and sustained five necessary conditions are required ..... trust, engagement, transformative politics, strategic positioning and wisdom... it is not for the faint-hearted. It requires risk-taking and working strategically and collectively with others.

In initiating change and innovation, activist professionals create new spaces for action and debate. As activist professionals seek to improve the learning opportunities for recipients and providers of education they must develop trust, manage transformative politics, position themselves strategically, and lead through profession oriented strategies. As a result, in initiating change activist professionals need to ask and resolve five crucial core questions that define and shape their activism:

1. How can a shared sense of values, principles and strategies be debated and negotiated between the stakeholders involved in the change?

2. How can the stakeholders be engaged in new reciprocal forms of affiliation and collaboration?

3. How can the politics of transformation change the spaces for debate, research, structures and processes?

4. What new networks and alliances have been enacted through strategic positioning?

5. How has evaluation and reflection developed a wise and insightful grounded professional knowledge?
These core questions drive the research described in this portfolio and constitute the heart of profession-led change. Answering these questions poses challenging and difficult tasks in education. The response to this challenge requires communicating the role of research in catalysing communities of practice. It requires examining the research ‘visas’ granted and territory traveled. Above all, this answering requires an examination of how activist professionals can lead change that hopes to invigorate and strengthen the profession.

1. How can a shared sense of values, principles and strategies be debated and negotiated between the stakeholders involved in the change?

The first core issue describes how professionals who are leading change, debate and negotiate with stakeholders in the political, social, educational and cultural context in which the change occurs. In this research portfolio, through the development of new teacher education courses, the role of culture in learning is explored in order to enable new teachers to improve their ability to meet the learning needs of Polynesian Australians (Pasifika Australia). These courses have been designed to develop a cultural dimension in teacher education. In doing so, the courses have required the development of new principles and strategies between teacher education and the South Pacific communities involved. This research presents the impact of these courses on cultural reflection among new teachers. It raises fundamental issues about the role of culture in learning.
2. How can the stakeholders be engaged in new reciprocal forms of affiliation and collaboration?

The second issue is related to how activist professionals leading change develop new partnerships with stakeholders. In this research portfolio, the role of research in the development of new partnerships with industry is explored. It examines the ways that research has led to the design of new ways for educational researchers and educational publishers to work together to improve the quality of educational publishing for students.

3. How can the politics of transformation change the spaces for debate, research, structures and processes?

The third core issue concerns the way that in both responding to and leading change activist professionals employ the politics of transformation to change the spaces for debate and research. This research portfolio presents the role of research in generating new ways of framing educational issues. It examines how cognate discourses and research methodologies have created new frameworks to examine important ideas in the structure of the teaching profession. It also considers how benchmarking methodologies can generate not only new insights but also new discourses. A critical aspect of this research was the transfer of experience and understandings gained from other disciplines into the context of education.
4. **What new networks and alliances have been enacted through strategic positioning?**

The fourth issue concerns the way that professionally led education change and innovation creates new networks through strategic positioning and activism. In this research portfolio, the role of research in analysing new forms of teacher education are explored. This research investigates how new forms of teacher education influences the debate on teacher learning. The research examines how learning occurs in a new case-based teacher education course at Sydney University. It critically examines how best to design teacher education that places the demands of the classroom and community at the core of professional education.

5. **How has evaluation and reflection developed a wise and insightful grounded professional knowledge?**

The fifth core issue concerns the way that grounded professional knowledge is derived through evaluation and reflection. In this research portfolio the embedding of ICT in classroom practice to improve student learning was explored. Much of the research in this area was generated in the context of school and classroom experience. The research presented, based on both benchmark and action research principles, focused on the role of evaluation and reflection in developing insightful, grounded professional knowledge on how teachers could best incorporate ICT into their teaching. This research has had significant implications for the design of teacher professional development which embeds ICT into classroom practice, and critiques some of the central premises underpinning the rationale for e-learning.
The research questions raised by the five core issues form the basis of the overarching statement of this portfolio. Each issue and the research problems that it frames is explored from the perspective of the activist professional. Each core issue is then linked to the appropriate chapter, which contains the relevant publications. The way that the research issues have been resolved has been presented in a conclusion for each of the core issues discussed in the overarching statement. Each core issue analyses the research methodologies that are congruent to the issue examined. Findings are presented that reflect on the meaning of activist professional led change.
CORE ISSUE 1

How can a shared sense of values, principles and strategies be debated and negotiated between the stakeholders involved in the change?

Afakasi

Rubina Rivers Forester

Sometimes it suits me to be white
To be among papalagi*
At an elegant dinner
With a line of forks on the left,
A line of knives and spoons on the right,
Tall, thin crystal goblet,
Butter dish with a crescent roll broken just so,
Served by a waiter with black skin
Hoping I’ll leave him big tip.

Sometimes I choose to be brown,
To wear all white to a funeral
And shed big Polynesian tears,
To sing “Tofa my Feleni”.

* European
** Goodbye my friend
This section explores Core Issue 1. It outlines the processes involved in developing a shared vision and presents research and findings on the relationship between culture and learning. The publications presented on this core issue are contained in Chapter 2 of the portfolio.

### 1.1.1 Culture and Learning

Three forces have raised the profile of the role of culture in learning. The initial force is the increasing recognition of the growing cultural diversity of the student population. Research in the United States has demonstrated that 'one out of every five students is a recent immigrant or born to parents who are immigrants' (Hawaiian Charter for Culturally Responsive Pedagogy 2002:4). Further estimates suggest that 50% of the school population in the two largest states in the Union (California and Texas) will be Latino by 2020 (Garcia 2003:3). In New Zealand, the Education Review Office's report on *Multicultural Schools in New Zealand* estimated that by 2051, Pakeha (European) children will only make up only 33% of the school roll, whilst Pasifika students - Maori and Pacific Island taken together - then will comprise up to 54% of school students. Currently Pasifika students comprise 30% of the student body (Education Review Office 2000:5).

In Australia, Polynesian Australians of Samoan, Tongan, Cook Island and Fijian heritage constitute a growing and identifiable cultural group in New South Wales schools; in certain parts of Sydney they are the fastest growing minority cultural group (Horsley 2003). Since it is accepted that western educational systems have usually not responded well to the needs of culturally and linguistically diverse populations (Volf 2000) the current changes in the student populations' cultural composition is raising issues of how teachers and schools can better manage the
educational challenges that such new cultures bring to the classroom. Reinforcing this challenge is evidence of significant difficulties in Pasifika educational achievement. For example the New Zealand census (1996) showed that 45% of Pacific and 48% of Maori students leave school with no qualifications. In Australia, research I have undertaken has shown that Polynesian Australian students exhibit similar difficulties in their education with low retention rates, high rates of suspension and expulsion and literacy and numeracy problems (Horsley 2003).

The evaluation of these difficulties has led me to develop school-university-community partnerships and structures such as homework study centres and Polynesian student days that are offered in conjunction with teacher education courses. The research presented in this portfolio is based on teacher education initiatives that also aim to improve the educational outcomes of Polynesian (Pasifika) Australians. In 2002, the Pacific Education Group, which I convene at the University of Sydney, instituted a prize for academic achievement in the Samoan community. In responding to this and the other education initiatives, Sydney’s Samoan community made a special presentation of fine mats and a tanoa (kava bowl) to the University. At a traditional ceremony, thanks was given to those who had made major contributions to the community, recognising the coming together and sharing of values and trust known in Samoa as fa’a samo a or mutual obligation.

The second force raising the profile of culture and learning is new research on indigenous educational ideas about learning, knowledge, wisdom and language. In particular, Helu-Thaman’s (1994, 2003) research has shown that traditional epistemology and educational ideas shape and construct Polynesian identity, culture and being. Traditional theories and practices of education remain at the core of cultural learning. In turn cultural learning provides the frame and parameters for
other learning. Western curriculum and education systems which neglect traditional values, relationships, social practices and understandings, ignore both the purpose (or end) of education and its appropriate pedagogy. As a result western education curriculum and pedagogy are likely to fail Polynesian (Pasifika) children. This indigenous education/research movement has seen a resurgence in the study of traditional educational ideas of Fijians (Nabobo, 2003, Bakalevu, 2003), Cook Islanders (Mokoroa, 2003), and Samoans (Buatava, 2003). The implications of indigenous education ideas for Australian teachers and teacher educators has been further spelt out by Taufe'ulungaki (2003:16)

*Teachers must capitalise on the wealth of experience, knowledge and skills the children bring with them from their home cultures to the learning process, and deliberately use those values, beliefs, world views, knowledge, speech rules and learning systems to organise their classrooms, communicate with and teach their students.*

The research in this portfolio has provided teacher educators with a user-friendly window to view this research, and has provided practical examples of how it can be used in the construction of teacher education programs. This is new knowledge in Australian teacher education. Currently, traditional educational concepts and theories are being introduced into the curriculum of teacher education at the University of the South Pacific (Helu Thaman 2003). My work on establishing new educational programs with the community and developing new teacher education programs has allowed these ideas to be developed in an Australian context with Polynesian Australians. This research on the cultural reflection of teachers has in turn been of interest in New Zealand and the Pacific as they represent an application of South Pacific ideas in an Australian context.
One of the more promising aspects of indigenous education research has been to focus thinking about the importance of classroom relationships. Since relationships depend on cultural and social frames, reflecting on classroom relationships requires reflection on the social construction of Polynesian Australian learners. Polynesian learning is constructed through the strength of students’ Polynesian socialisation. According to Vaioleti (2001:17) this socialisation is based on

three basic educational ideas, namely ako (learning, teaching/ co-learning), ilo (knowledge) and poto (wisdom). Conceptual analysis of these notions of education reveal that learning or ako is a lifelong, continuous process, and that it is a precondition to gaining knowledge, ilo, and becoming poto or wise. A Polynesian student's personhood is located by his/her role and relationship to the family (e.g. first born, youngest, male, female), the land and role in his/her family in the larger Kainga

Explication of these concepts has assisted teachers and teacher education students to utilise more culturally sensitive and responsive ways of developing positive relationships with students and valuing the culture they bring to the classroom. One critically important impact of the new innovative teacher education course and the research it has generated, is that it has enabled pre-service student teachers, teachers and educators to identify new ways of forming more positive relationships with their Polynesian students.

The third force raising the role of culture in learning has been the rise to prominence of socio-cultural theories of learning. Socio-cultural or social-constructivist approaches to learning emphasise processes such as scaffolding, the role of language and social context, the recognition of prior learning and cognitive apprenticeship by expert others, as vital determinants in the promotion of learning. The socio-cultural approach to learning emphasises the role of culture
and cultural tools in the learning process and the way that learners are enculturated into a community of practice. Application of this approach to education emphasises the role of students' prior learning as they approach new authentic learning tasks. It has been found that a vital aspect of the teacher's role is the building of bridges between the students' existing knowledge and the knowledge the student is to create by the development of a zone of proximal development (Vygotsky 1978). This approach to learning requires that teachers understand the students' non-school cultural life and background and use this knowledge in planning teaching and learning. This approach to learning mandates that more attention be paid to students' non-school life and the cultural knowledge they bring to the classroom. The development of the teacher education course applied sociocultural learning principles in the design of experiences, instruction and also provided opportunities for inquiry and cultural reflection.

1.1.2 Culturally Responsive Teacher Education Course Design

The teacher education course (Master of Teaching) described in the research presented in Chapter 2, was based on socio-cultural learning principles. It was designed as an inquiry and was case-based, with careful consideration being given to the development of structured experiences in schools and educational settings. Partnerships were developed with schools and communities to provide authentic workplace contexts. Teacher education students engaged in open-ended enquiry with teaching cases written by teachers, students and parents about authentic events in schools and education settings. Teacher education students were encouraged to structure emergent communities of professional practice, linked to existing communities. These features were replicated in the teaching of Polynesian Australian students.
1.1.3 New Visions and New Discourses: Developing a Shared Vision

Polynesian migration to Australia began in a substantial way within the last 15 years, the most rapid growth having taken place in the last five years. This was a relatively unanticipated development but it means that the Polynesian Australian community is relatively recent (Va'a 2001), and emergent (Horsley 2003).

These communities are heavily dependent on their churches and have yet to have a real voice in the Australian community. Unlike some immigrant communities, no Pacific languages are taught in schools and no single outcome reflecting Polynesian Australian identity exists in the curriculum of New South Wales schools. As the new teacher education was based around the involvement of and partnership with the community, a new shared sense of values, principles and strategies needed to be negotiated between the community and the university.
As Sachs (2003:140) has declared, 'this required new kinds of social and professional relationships where different parts of the broader educational enterprise work together in strategic ways ........ active trust requires that shared sets of values, principles and strategies are debated and negotiated'. The new interactions and relationships necessitated by involving teacher education in the community, ultimately resulted in a new collaboration, involving joint decision making. Sachs (2003) describes these new ways of working and thinking as 'active trust'. This demanded negotiation of a Pacific Islander conceptualisation and interpretation of shared values and principles as they apply to education and learning.
Some of the strategies involved:

- student teachers visiting homes in the community
- community leaders educating students teachers about Pasifika culture;
- student teachers attending community events, ceremonies and celebrations and services

Using culturally appropriate communication networks, a home study centre was provided at the University of Sydney for the use of parents and their children, making further opportunity for contact and communication available. Community radio and church services were used to disseminate information and to communicate with communities. Community members wrote teaching cases that were used by the student teachers as the basis of their inquiry. In return the student teachers acted as mentors and tutors for Polynesian Australian students.
This course will focus on educating South Pacific Children in Australian Schools. The course will aim at exploring some of the major issues confronting teachers, schools, communities in educating South Pacific Children. The course will involve working with South Pacific communities in Sydney and with South Pacific resource staff from regions and schools. The course is also designed as an orientation to possible internships in Pacific Locations.

In addition to the links above, this site has several resources of relevance:

- >> Samoan Internship report 1999
- >> Pacific Island Teachers' Handbook
- >> Ting Ting Bak (Solomon Island Song)
- >> Notes on Tonga and the Tongan Community in Sydney
- >> Interviews with Tongan Migrants 1 - Jean and Steven Prescott
- >> Interviews with Tongan Migrants 2 - David
- >> Interviews with Tongan Migrants 3 - Peter
- >> Case Study: Luke and D - A Teacher's Perspective
- >> The Educators views 1: Paul Dufficy
- >> The Educators views 2: The deputy principal and school counselor
- >> Educator views 3: The Australian Education System and Polynesian Students Interview with Mike Horsley
- >> The community view: Samoan welfare worker
- >> Fijians in Australian Education
- >> Notes from the Samoan Youth Conference
- >> A Multicultural Approach to Learning: Pacific Island Students
In the development of this research I was mindful that the partnerships were culturally-based and needed to be developed within the context of traditional cultural relationships. My main approach was to provide activist professional leadership in an islander community cultural context by catalysing the community through traditional meeting institutions such as *fa'amolemole* (exchange-based) ways of meeting and discussing educational issues. The cultural frame of teachers gives meaning to their thoughts and actions. By extending this cultural frame into Pasifika cultural institutions, teachers and student teachers involved in this research were able to expand their cultural understandings.

In the New Zealand context, Vaioleti (2002:19) has suggested that

> at the national level, if our desire to "close the gap" between Polynesian and other students' school outcomes, then the Polynesian community must be involved in the formal schooling of their children

The establishment of a culture of consultation between the university, student teachers, parents, the community and increasingly the school, is making possible the incorporation of students' cultures into the content and pedagogy of schools.
1.1.4 Culturally Responsive Teaching

An unintended by product of my research has been the development of a small cadre of secondary teachers keen to improve their teaching of their many Polynesian (Pasifika) Australian students. Involvement in the teacher education program conducted as part of this research as well as community based programs enabled these experienced teachers to develop new cultural learnings and to be introduced to new theories and ideas about pedagogy and culture. Through the research presented, the experienced secondary teachers and teacher education students were able to create a community to share and shape vision and thus explore solutions to the problems in Polynesian Australian education that they encountered.

My research also had a critical impact on demystifying theory and research on teachers’ developing positive classroom relationships with Polynesian Australian students. As an example the following diagram of Tongan conceptions of pedagogy shows the role that the Tongan concept of ako (holism in learning) can play in the way that teacher education students can conceptualise how they may establish positive and rewarding classroom relationships. The diagram compares traditional Tongan understandings of education to western concepts. (See appendix 1 for a detailed outline of ako, ilo and poto concepts provided in the table below).
<table>
<thead>
<tr>
<th>Role Model</th>
<th>Technocratic (Behaviouristic)</th>
<th>Professional (Humanistic)</th>
<th>Ako (Holistic - enactivism)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Skilled technician</td>
<td>Reflective practitioner</td>
<td>‘Ofa/āroha (Compassion, love)</td>
</tr>
<tr>
<td>Criterion of good practice</td>
<td>Competence</td>
<td>Integrity</td>
<td>Poto (wisdom)</td>
</tr>
<tr>
<td>Pedagogical aim</td>
<td>Attainment of specific learning outcomes</td>
<td>Development of diverse human capabilities</td>
<td>Relationship, meeting role/duties to community, nature etc (cultural continuity)</td>
</tr>
<tr>
<td>Administrative context</td>
<td>Efficient management</td>
<td>Professional leadership</td>
<td>Collaborative/hierarchical/relationship</td>
</tr>
<tr>
<td>Motivation</td>
<td>Extrinsic</td>
<td>Intrinsic</td>
<td>Intrinsic/extrinsic (whanau -role)</td>
</tr>
<tr>
<td>Forms of accountability</td>
<td>Contractual compliance</td>
<td>Professional commitment</td>
<td>God /society/family (role)</td>
</tr>
</tbody>
</table>

Adapted from Codd (in Vaioleti, 2001)
CHAPTER 1 Overarching Statement: Activist Profession-Led Change

This diagram is a useful summary of the contrasts between pakeha (European) and Islander understandings of knowledge, wisdom, learning and education. The cultural ideas summarised in the diagram provide the core learnings of the new education and in-service courses, and are leading to a renewed interest in the culture and learning of Pasifika Australian students.

TAPA CLOTH

Rationale:
The Pacific Island groups at Campsie P.S. range from Early Stage 1 to Stage 3, and meet during the Community language time once a week. Students come from Tonga, Samoa, Cook Islands, Fiji and New Zealand.
Stage two & three children were asked to write down the kinds of activities they would like to study this year resulting in most students requesting art. Working from the summation that they would be more involved in studying something they liked, a literacy/art program was developed around this traditional art form of the Polynesian people.

Activities:
• A school visit from a Tongan community member to explain Tapa and answer questions.
• A chance to look at examples of different traditional designs. (drawn from Pacifica)
• Dictagloss.
• Classification of formal & informal uses.
• Sequencing activity of information.
• Cloze passage on information.
• A formal grammar identification activity from the information. (nouns, verbs & adjectives)
• Procedural text – from information on ‘How bark cloth is made’
• Explanation text – explaining about Tapa cloth. (Portfolio task with a small example of their own design)
• Design of their own Tapa on A3 paper. The students then chose whether or not they would like to paint their designs.

Outcomes:
All students have participated in the activities, many of which have been completed in pairs and groups to scaffold those with weaker literacy skills.
Students have all completed designs – some traditional but others have become quite creative and developed their own designs.
One student made a book stand and burnt her Tapa designs onto the woodwork.
Parent have offered to share their Tapa with the students.
Students have taken pride in their work.
A Lewis. 20/6/03.

Primary Literacy program based on the narrative of the Tertiary Awareness for South Pacific Islander Program, developed by Anne Lewis of Campsie Primary School.
These research findings have created a new discourse - that of ako, ilo and poto (learning, knowledge and wisdom) among teachers of Polynesian Australians. Culturally responsive teaching refers to teacher planning and behaviour that minimizes the gap between students' home experiences and their experiences in school. Closing this gap requires teachers to act in culturally responsive ways. Polynesian concepts of learning, classroom relationships, wisdom and appropriate behaviour are based on conceptions of the links between personal and kinship relationships and collaborative activity within hierarchical roles structured within the whanau (Tongan/Maori). My research methodologies and findings have been based on reducing the cultural gap between teachers and communities for the benefit of Polynesian Australian school students.

1.1.5 Conclusion Core Issue 1

Vaioleti (2001:22) concludes that

*We need teachers who have strong cultural identities, who know who they are, what they need to do and do it well for the benefit of everyone and the environment (poto). Their area of responsibility must not end just with their own students but extend to other students as well and their own communities as their obligations are not just to one sector of the national community. There is a need to assist teachers and teacher educators to be more tolerant of those that are different and to better contextualize their teaching art and sciences, so that Polynesian and more children can benefit from their formal education*
Helu-Thaman (2003) claims that a cultural gap is measured by the distance between the culture of the school and the culture of the child. Accordingly it is incumbent on an education system to embrace culturally based knowledge. Therefore it is vital that South Pacific cultural notions, values and knowledge be taken into consideration by teachers responsible for the education of Polynesian Australians.

This portfolio has focused on achieving this goal through the development of new teacher education courses that involve community-university-school partnerships. Accomplishing this task has required professionally-led educational change that has formed new kinds of social, educational, community and professional relationships. This accomplishment has involved developing trusting and transformational relationships with Polynesian Australian communities; and ultimately a new shared vision for the future of the education of Polynesian Australians.
CORE ISSUE 2

How can stakeholders be engaged in new reciprocal forms of affiliation and collaboration?

“The hard lines used to distinguish one thing from another turn out to be shadows themselves”

Barbara Goudy The White Bone 1998

The second core issue to be addressed in this portfolio section explores how educational innovation arises through reciprocal forms of affiliation and collaboration. It outlines the role played by activist professionals in developing stakeholder partnerships which then promote improved educational practice. The publications presented on this core issue are contained in Chapter 3 of the portfolio.

1.2.1 Introduction

The applied research detailed in core issue 2 acted to catalyse educational publishing to develop new collaboration based on a partnership model. The development of a specialised research institute dedicated to researching the role of teaching and learning materials in learning led to an industry education partnership with the Australian Publishers Association (APA). This collaborative partnership allowed different stakeholders to cooperate to improve the way Australian educational publishing developed resources to support learning. In forming and extending this partnership the stakeholders became 'mutually engaged in common goals, sustaining the energy for change within their evolving partnership' (Sachs 2003:4). The goal of improving educational publishing created
a mutual engagement that generated a new professional dialogue. In this dialogue a new space was created that allowed new kinds of affiliation and partnership to emerge.

1.2.2 New Research on Teaching and Learning Resources in Learning

All projects researched in the portfolio relate to the use of teaching and learning material in school classrooms.

The Teaching Resources and Textbook Research Unit (TREAT) was established in 1986 to undertake a 28 school study into student access and systemic funding of textbooks and teacher perceptions of textbooks in Government Secondary schools. In another research project this study was replicated in 20 Private schools. Analysis of results of these two studies (Laws 1988, Laws and Horsley 1992) showed for the first time the impact on pedagogy and teaching and learning of reducing the amount of funding for teaching materials. Because the studies directly compared secondary schools funded at different levels and containing different resourcing, the research established that teachers deprived of textbooks, set less homework, wasted teaching and learning time in distributing materials and often used inappropriate resources and teaching and learning strategies for their classes (Laws and Horsley 1992). In 1992 I developed a textbook observation schedule instrument (termed TEXTOR) for observing and analysing the interaction between textbook access, teaching and learning strategies and teachers' use of textbooks in the classroom. The textbook observation schedule was used to show how shortages of textbooks and other teaching materials influenced the way teachers planned and delivered lessons and restricted their teaching and learning strategies.
(Horsley and Laws 1993); how expert teachers used textbooks in their teaching and learning (Horsley 1994) and how student teachers (pre-service teachers) used textbooks and other teaching and learning materials in the teaching and the role textbooks played in their teacher preparation (Horsley and Laws 1993). Further unpublished classroom observation studies using TEXTOR showed that there were major subject differences in the classroom use of textbooks similar to that reported in the research of Sosniak and Perlman (1990).

**1.2.3 New Collaborations for Researchers and Educational Publishers**

Educational publishers often employ teachers to write teaching and learning materials (Horsley and Lambert 2001). These materials reflect the classroom practice of the authors. In addition, educational publishers often work with teachers to trial teaching and learning materials in their classrooms. Despite these practices and the use of other research methodologies (especially focus groups) educational publishers are unable to undertake classroom observational studies in naturalistic settings due to cost, ethical and political considerations. In this way educational publishers do not have access to research in their market.

The research of the TREAT research unit represented a significant opportunity for publishers to support research on the use of teaching and learning materials and use the research findings in the development of improved publications for teachers and students. The specific research presented in this portfolio explored the use of teaching and learning materials by teachers and students from various perspectives; explored the use of photocopies used in lessons; explored the use of textbooks and other print based media used in on-line courses; used observation
schedules to gather data on teaching resources used in classrooms; and analysed the use of photocopying undertaken by teachers to support lessons. These studies have allowed a range of stakeholders to explore the role of one of the primary tools of learning, teaching and learning resources.

To cement this partnership, between research and education publishing stakeholders, in 1994 TREAT established a national publishing competition The Australian Awards for Excellence in Educational Publishing in a formal partnership with the Australian Publishers Association. The Awards are sponsored by the Australian Newspaper and have grown to be the major event on the Australian education publishing calendar. The awards have set new benchmarks for the Australian educational publishing industry and have allowed TREAT’s research to be disseminated and applied to improve Australian educational publishing. The Awards promote best practice by encouraging publishers to utilise the practices that have been established in the literature by the research.

I have been the chief judge of the Awards judging panel since the inception of the competition. TREAT manages the competition on behalf of the Australian Publishing Association. Every year a catalogue of meritorious, shortlisted and category winning titles is prepared by the chief judge. This catalogue is published by the APA and circulated to all school and public libraries (12 000 libraries) and school systems in Australia. This gives the educational community advice on high quality teaching and learning resources.
In 1995 the Australian Publishers Association funded a large scale 10 school study into how teachers and schools provided teaching and learning resources for a new curriculum in junior secondary school (Young and Horsley 1995). This study was used as the basis of a series of educational publishing training sessions that explored how publishers could develop best practice in supporting curriculum change by producing educational materials that met teachers' needs.
One of the issues raised in this study was the use of photocopying in schools and the development of school made texts comprising of photocopies of sections of other texts. The research stimulated thinking on the way that teachers mediate the use of texts and teaching and learning materials in the classroom and how they select resources for their classes. These issues are taken up in the research portfolio presented in chapter three. In particular, one of the publications explicates socio-cultural conceptualisations of the role of learning tools in comparison with constructivist notions of learning objects arising from of e-learning standards (Horsley and Walker 2003). This research was based on studies of teachers photocopying behaviour. The other research presented focuses on some of the main implications of classroom based observational research for publishers, teachers and policy makers.

1.2.4 Research and Practice

A major focus of research presented in chapter 3 is on researching practices that are highly relevant for teachers and that have the capacity to improve the educational process. The collaboration between researchers and practitioners in the educational publishing industry contrasts to the links normally described between educational research and educational practice.

Research undertaken on the impact of education research on educational practice in the early 90's (1992, 1997) espoused the view that 'education administrators and practitioners perceive much of educational research to be irrelevant to their concerns' (Holbrook, Ainley, Bourke, Owen, McKenzie, Misson and Johnson 2000:x). This research confirmed the widespread view in the educational industry that 'The professional wants new solutions to operational matters while the researcher seeks
new knowledge' (Holbrook, Ainley, Bourke, Owen, McKenzie, Misson and Johnson 2000). To examine these issues further the Department of Education, Science and Technology (DEST) commissioned a major series of studies in 1999 framed around the issue of the Impact of Educational Research, in particular, its impact on schools and educational practice. The studies used a variety of methodologies to measure the impact of research on practice. These included mapping research activity, conducting interviews with key stakeholders, user centred studies mapping back practices observed in classrooms and educational settings and bibliometric analysis on the purposes of key research endeavours. The scope of the investigation was extensive and provides a useful survey of the key issues in the praxis of research and practice. Overall, the studies found that although 'complex and productive relationships between researcher and educator had developed through a wide range of communication processes, these connections were fragile' (Holbrook, Ainley, Bourke, Owen, McKenzie, Misson and Johnson 2000:1). Furthermore, these connections were dependent on supportive policies and structures that provide incentives and strengthen the capacity for communication. Also some of the studies found that 'the influence of university research in schools was largely indirect, unstructured and often mediated through individuals' (Holbrook, Ainley, Bourke, Owen, McKenzie, Misson and Johnson 2000:1). In particular, it was noted that the 'the most frequently quoted example of systematic educational enquiry affecting the school context was action research since it appeared to bring immediate benefits' (Holbrook, Ainley, Bourke, Owen, McKenzie, Misson and Johnson 2000:5).

The Holbrook, Owen et al studies recommended the establishment of an effective distribution of research activity, to serve the needs of a diverse and highly dispersed education community in the immediate and the longer term, as a high priority. A
number of studies in this research explored the relationships between the purposes and topics frequently found in research and the practical concerns expressed by professionals. This is a complex issue and the studies explored the multilayered connections between research topics, research, funding, system priorities and practice. Research is somewhat focused on professional problems and influences these problems, but many practitioners believe that methodological advances, individual interests, funding and system priorities take precedence over many of the practical problems that teachers face in classrooms.

The culture of teaching and education has frequently classed other stakeholders in education as 'outsiders'. Although the studies on the relationship between research and practice discussed above excluded the educational publishing industry, many of the conclusions reached in the study apply to education publishing. Few would disclaim that the educational publishing industry is a vital stakeholder in education as it provides the learning tools and teaching and learning resources that underpin and support teaching and learning. But the importance of educational publishing and its influence on teaching and learning have traditionally been neglected by educational researchers. The reasons for this are complex. Part of the explanation for this neglect lies in the research of Hanushek (1992, 1997, 1998), whose production function and meta-analytic research methodologies concluded that increasing spending on education inputs did not lead to increases in student outputs (achievement). This research has been strongly contested by a range of research, but policy makers quickly adopted its conclusions as an argument against increased spending on teaching and learning materials (Laws and Horsley 1992).
1.2.5 Research on the Role of Textbooks in Learning

It could be argued that many of the most important aspects of teaching are under represented in research. Topics such as lesson planning, program construction and the use of teaching and learning materials (excepting ICT) are infrequently researched. Lambert (2001:3) in a review of research on textbooks concluded 'there is virtually no research knowledge based upon direct classroom use of textbooks in UK secondary schools, despite their self evident pre-eminent position in teaching'. Lambert attributed this neglect to a British anti-textbook ideology and perhaps resulting in a 'strongly entrenched antipathy towards textbooks among British ...... educators' (Marsden 1998:13).

He went on to suggest that

In 1985, John Lidstone identified a major discontinuity between the rhetoric and reality regarding textbook use (Lidstone 1985; 1992): he found that textbooks were widely used and highly valued by ...... teachers, despite an apparent cultural orthodoxy among educationists that they were best avoided in the interests of creative and imaginative teaching. I contend that such a mismatch has been a persistent feature of secondary school geography in England and exists even more prominently today since the advent of the geography national curriculum in 1991. It is a matter which requires serious attention, for at best it leads to vague feelings of professional guilt on the part of teachers who use textbooks - much as drivers who use their cars to pick up the Sunday papers: "1 know 1 shouldn't, but... ". At worst, it has reinforced a situation in which teachers and trainers appear to exist in separate worlds, with the research community shut off from the "real world" of the practitioner. In the meantime, a woefully under-theorised aspect of pedagogy (teaching with textbooks) continues to be propagated in geography classrooms, unchallenged by any wider considerations or alternative perspectives.
What is clear is the ubiquitous role that textbooks play in both preparing and delivering teaching and learning. Some studies have shown that textbooks are used in (even if photocopied) between 75% and 90% of lessons (Chambliss and Calfee 1998, Horsley and Laws 1992, Horsley 2002). The most recent research on the role of textbooks and teaching and learning materials comes from The Third International Mathematics and Science Study (TIMMS 1999) video study, which produced two reports, one on mathematics textbooks and the other on science textbooks, used in the participating countries. Using these reports, Schmidt, Mcknight and Raizen (1997) developed an analysis of the role of textbooks in United States mathematics education. As well, the 1999 Third International Mathematics and Science Study-Repeat (TIMSS-R) Video Study investigated eighth-grade teaching in science as well as mathematics. Using an observational set of methodologies somewhat similar to the TEXTOR observational schedule they researched teaching learning in mathematics classroom lessons with 87 filmed lessons from 17 countries (Stigler, Gallimore and Hiebert 2000). The major finding of this series of studies was that at least 90 per cent of lessons made use of a textbook or worksheet of some kind. The study went onto to confirm that teachers rely on textbooks for content in the assignment of tasks, the practice/application and re-instruction, and the conclusion. Even though teachers say that they use the Curriculum guidelines, from this table (and my experiences), teachers rely on the textbooks for content, knowing that they are written to reflect the content demanded in the syllabus. In Australia we do not have mandated textbooks, and the teachers can choose which textbook they use. However in reality, this is an economic decision as only one textbook is usually used at each school and this textbook may be used for many years even after a better textbook becomes available. The textbooks do not vary in content but do vary in difficulty of problems and suggested teaching methodology. The teacher has the
flexibility to choose the methodology even when they are using a textbook as a primary resource.

These findings did show that even though teachers from different countries around the world used materials at the same frequency they used them in different ways and with different teaching and learning strategies. The most important aspect of this research from the perspective of this portfolio is that it brings into focus the benefits of classroom based observation research that is then benchmarked by comparing observations from different classes in different countries.

The aim of this portfolio research in exploring the role of teaching and learning resources in supporting learning is to develop methodologies to observe and benchmark classroom teaching and learning. Because of its close relationship to practice, it has been possible to use the research to develop new forms of collaboration and affiliation dedicated to improving practice.

1.2.6 Conclusion: Core Issue 2

Partnership has been described as shared trust in the application of differential specialisation to the pursuit of mutual goals. The research I have conducted in educational publishing catalysed the major industry group into the development of a formal partnership arrangement with researchers of teaching and learning resources. This arrangement and the institution established (the Annual Australian Awards for Educational Publishing) sets the mutual goal of researching and disseminating information on the teaching and learning materials produced by the educational publishing industry.
By the formal arrangement between TREAT and the APA, TREAT selects the judging panel, comprising practicing teachers, researchers, authors, publishers. The judges receive training and represent a bridge to the publishing and educational communities. The photo is of the 2002 judges.

The research in this portfolio has opened up new communication channels and provided practical research in a user friendly format to inform practitioners. It has lead to the development of a new shared institution that has opened a new conversation about the quality of teaching and learning materials to support teachers and learners. The research clearly demonstrated new affiliations and collaborations between the communities of practice in educational publishing and teaching and educational research.
CORE ISSUE 3

Can the politics of transformation change the spaces for debate, research, structures and processes?

“Solidarity is not discovered by reflection but created. It is created by increasing our sensitivity to the particular details of other ....unfamiliar sorts of people”

Richard Rorty, Contingency, Irony and Solidarity 1989

The third core issue to be addressed in this portfolio section explores how the politics of transformation can change the spaces for debate and research in a profession. Transformational learning occurs ‘when an individual revises old or develops new assumptions, beliefs and ways of seeing the world’ (Cranton 1994:14). For a profession, transformation is akin to the paradigm shift outlined by Kuhn in The Structure of Scientific Revolutions (1962). Old meanings are questioned and the assumptions and practices that have guided shared meaning are disturbed by research or voices that provide new ways for considering the foundational questions facing a profession. In teaching this refers to engaging with the 'discursive practices that create new political subjects and create new political spaces in which to act' (Sachs 2003:5). This transformation may contest the legitimacy of received points of view, or at least put forward alternative frameworks of knowledge and meaning. This section outlines the role that cognate research undertaken by the author has contributed to transforming existing orthodoxies by applying research methodologies from other disciplines in order to gather and publish data that has contributed to a rethinking of teacher and academic professionalism.
1.3.1 Introduction

Core issue 3 is presented in two chapters. Chapter Four explores the research on quality across a range of professions and Chapter Five explores new ways of conducting academic salary relativity research. Central to the research presented across the two chapters are benchmarking methodologies that allowed new comparisons to be made and which subsequently generated new cognate-based knowledge that reframed the debate in both of the fields researched.

The consistent theme linking these two chapters is the generation of both insights and discourse that provide new spaces for debate and reflection in research communities. According to Masson (1997:60) this requires 'the production of alternative frameworks of knowledge and meaning in the process of collective action'. Sachs further argues that creating new forms of professionalism will require rethinking the form, content and assumptions underpinning teacher professionalism and professional identity (Sachs 2003:5).

For the purposes of this portfolio, it is therefore claimed that personal and cultural transformations that run counter to the existing orthodoxies and institutional formations depend on the capacity to engage with and consequently reshape the discursive terrain of politics. The research papers presented in Chapters Four and Five have had major impacts on the nature of the discourse in which professionalism is constructed and also on the politics of transformation. Both have produced alternative frameworks of knowledge in which research and practice have to be considered afresh.
1.3.2 The Cognate Profession -
Chapter 4 of the Portfolio

The image of a profession is correlated to public and well-advertised procedures for continuing professional development. The community bestows on the profession the responsibility and privilege of self regulation and in return the profession fulfils the obligations of its social contract, (Horsley 2001).

In 1998 The Minister of Education in New South Wales established a Teacher Education Review. I was seconded to the Review from the University of Sydney and was appointed to the Review Secretariat. My specific brief was to undertake a study of the 'systems and procedures used to prepare for and enter (and stay in) other professions in New South Wales' (Teacher Education Review Terms of Reference). This was the first time any attempt had been made to compare teaching with other professions, and as such constituted a ground-breaking research project not only in New South Wales but also in Australia as a whole. The study entailed investigating the structure of other professions, the preparation and education of their members and also their efforts with regard to continuing education. These factors were to be compared with the situation in teaching. My brief included investigating the situation in the medical, accounting, dental, legal, social work, psychological, nursing and engineering professions. The indicators that were chosen for analysis included the extent and form of on-the-job training, the structure of professional experience and the systems of accountability and regulation in each profession. A detailed study was undertaken describing the ways in which different professions updated their knowledge and skills. In addition, a more detailed set of comparisons for nursing, as a cognate profession, was developed. That study included exploring the induction and employment of nurses.
The role of the Nurses' Registration Board in the employment and continuing professional development of nurses, was also examined.

Using a series of indicators, the research brief was designed to generate data on the following issues:

- How can profession best train and educate new professionals?
- How can the profession best structure and organise workplace and field preparation in training?
- How should a profession structure itself so as best to serve the community and maintain professional standards?
- How should a profession structure induction and mentoring and beginning service?
- How should profession best structure continuing professional development and standards?

The key methodology employed in the research analyses was functional benchmarking, something which had been developed to assess how a range of professions managed their operations. In addition, interviews were conducted with a range of professionals and professional bodies. Data was gathered on the key indicators of a profession that is presented in the research included in the appropriate Chapter (6) of the Review of Teacher Education (2000) on 'Quality in Other Professions'.
1.3.3 The Teaching Profession Compared

The results of this comparative research confronted the teaching profession with a number of challenges. One of the critical findings was that teaching as a profession was lagging in a number of key areas such as professionalism, pre-service preparation, continuing professional development, professional structures, institutions and professional induction.

_The Review of Teacher Education_ made a number of recommendations to the Minister for Education in New South Wales on ways to improve and promote the teaching profession (Ramsey 2000). A number of specific recommendation reflected the research conducted on other professions. Many of these recommendations were also investigated by the Task Force set up by the Minister to consider the implementation of the recommendations of the Teacher Education Review. The overwhelmingly positive response to the research findings and recommendations, particularly those relating to how the teaching profession 'measured up' or compared to other professions, indicated that they had a transformative impact on the teaching profession in New South Wales.

The research presented in the portfolio presents four findings from the comparisons made between teaching and other professions. The first finding from the research on benchmarking other professions established that _teaching had yet to establish a professional body to include the majority of teachers_. Other professions such as law, medicine, dentistry and nursing had established either regulated professional bodies through legislation or voluntary professional bodies (termed 'co-regulatory') through collective professional action (in professions such as accounting, engineering and social work). The research finding presented in
the portfolio was the cornerstone of the recommendation that a professional body of teachers should be established in New South Wales.

The second finding was that while teacher education had been subjected to over 20 reviews since 1980 (making it probably the most reviewed of any occupation) not one recommendation had been implemented. The benchmarking research I designed showed that the main reason for this failure was the lack of any professional body to implement reviews. In contrast, although other professions had been subject to much less review, their professional bodies had acted to implement review recommendations.

The third key finding was that teachers were less well prepared by their training than members of other professions. Trainee teachers spend less time in on-the-job training, complete fewer rotations, and compared to other professions are far less likely to undertake professional experience in the sites where they are likely initially to be employed. It was found that beginning-teachers receive the least induction in the workplace of any profession, but were expected to commence full professional responsibility more quickly than other professions.

The final critical finding was that in contrast to teaching, other professions have evolved complex and binding systems for continuing professional development for their members. This points to the fact that professionals in the 21st century can no longer depend on their initial training to provide them with the all knowledge and skills they will need to practice during the rest of their careers. In many professions continued licensing, registration and accreditation is linked to ongoing professional development on the basis of the argument that this is part of a social contract with the community (Horsley 2000).
These findings, presented in Chapter Four, had a major influence on the discourse of teacher professionalism, shaping the debate on the future structures of the teaching profession. That debate was informed by the discourse of comparison with and evaluation of other professions. Widespread discussion about the future professionalisation of teaching began to reflect core concerns raised by the research presented in the portfolio.

The research in this portfolio concentrates on professional responsibility and continuing professional development, and professional regulation and disciplinary procedures. I conducted further research (Horsley and Thomas 2003) to develop some of the ideas and insights that comparisons between teaching and other professions have revealed.

1.3.4 Professional Regulation and discipline

Horsley and Thomas (2003) examined two major developments in the theory and practice of professionalism over the past 20 years. One of these major developments was the movement towards ‘professional development’ in teaching (Hoyle and John 1995, Mahony and Hextall, 2000; Sachs, 2002). The other was the development of new procedures and mechanisms within the established professions in response to ever increasing demands for accountability by professionals (Freidson 1985; Daniel 1990, 1995; Thomas 2002). In the established professions this process of development and augmentation has been described as ‘re-professionalisation’, involving the modification of accountability and disciplinary mechanisms in response to calls for higher standards of professional behaviour. In this research the authors applied a conceptual framework of professionalisation and re-professionalisation first identified by Hoyle and John (1995) to explain
developments in procedures in disciplinary provisions and accountability mechanisms.

This portfolio research (Horsley and Thomas 2003) investigated the process of ‘re-professionalisation’ that occurred across professions, and the implications of this for the teaching profession. It encompassed professional discipline and professional regulation and extended the earlier benchmarking research I conducted (Horsley 2000) into the structure of professional regulation, licensing, accreditation and continuing professional development in the professions as outlined in the Teacher Education Review (see chapter 4). It also explored the concept of professionalism from an institutional framework, by examining how the professions were structured and organised.

The focus of the research presented on professional discipline and professional regulation is on professional ‘standards and conduct’. This is in line with recent attempts by teachers to professionalise themselves by controlling their field of work, being concerned with the introduction and development of ‘professional standards’. Daniel (1995) and Hoyle and John (1995) point out that a major dimension of professionalism concerns the operation of procedures and mechanisms concerned with standards maintenance. The proper maintenance of standards requires that there be a high degree and consciousness on the part of professionals of their accountability to their clientele, to each other and to society as a whole, and that there be effective disciplinary mechanisms to enforce accountability. For this reason, questions of accountability have formed a strong element in discussions and debates about professionalism. The outcome for some professions has meant developing new disciplinary mechanisms and for others the modification and strengthening of existing procedures. In teaching for example,
a worldwide standards movement is leading to the development of new accountability procedures.

This portfolio research has identified 're-professionalisation' as a process that had been occurring as professions responded to increasing demands for public accountability and for the augmenting and improvement of disciplinary procedures. The aim of the research on professional regulation and discipline (Horsley and Thomas 2003) was to develop preliminary insights from benchmarking disciplinary procedures across the professions. Since each profession operates in a community of practice in which meanings are continually negotiated, it could be expected that this research can identify changes and developments in the community of practice in this area.

1.3.5 Academic Salary Relativity Research -
Chapter 5 of the Portfolio

Chapter 5 of the portfolio presents research on academic salary relativities. This research and the subsequent two research reports included in Chapter 5 were commissioned by the Commonwealth Department of Education Science and Training (DEST). The genesis of the research originated from major Commonwealth reviews of financing and policy for the Higher Education Sector. Both the West Report of 1997 (Learning For Life: Review of Higher Education Financing and Policy - A Policy Discussion Paper,) and the Crossroads Review on Higher Education of 2002 put forward options for the financing of the higher education sector. However, the information in both reports on higher education staffing, human resource management and academic salaries, was limited. Despite the fact that staff salaries are the major cost in higher education and that the industrial relations system in the sector is a key determinant of how it operates, both reports assumed that
academic salaries were constant and exogenous to the Higher Education Sector. That ignored the fact that salary movements had been decentralised to individual institutions under the development of the enterprise bargaining system instituted in the mid-1990s. Both these higher education reports had very little to say about the future of academic salaries in the higher education sector.

It was in this context that DEST commissioned the two research reports presented in Chapter 5 of the portfolio. I was invited to be the key researcher and author for these research projects which sought to gather data on the market for academics in Australia, and to gauge the extent to which salaries paid in Australia are competitive with those of identified occupational groups in Australia and overseas.

In each project I had a very specific design brief. This was to:

• *identify occupation groups in Australia whose salaries can be validly compared with those of academics (for example, accountants, public servants, IT professionals);*

• *identify occupation groups in overseas countries whose salaries can be validly compared with those of academics;*

• *conduct research into the salaries of Australian academics and those of professional occupation groups in Australia and the countries identified;*

• *develop a clear picture of academic salaries and how this compares with professional salaries in Australia and internationally;*
The team that developed and carried out the research studies conducted five overlapping research projects to develop data that would enable analysis of national and international academic salary relativities to be undertaken.

In the second research project I conducted a series of interviews on industrial relations and academic salary relativities with Vice-Chancellors and members of the senior management of thirteen universities. In the third research project I developed a benchmarking methodology to gather data on academic and private sector occupations, job descriptions and salary relativities.

Human resource consulting firms have emerged in the industrial relations sector of the economy to provide the private sector with advice on issues ranging from salary levels to the retention, recruitment and retraining of staff and also on employment structures. These human resource firms have built up large data bases that contain private sector salary details that rivals and in many cases exceeds Australian Bureau of Statistics (ABS) survey data on salary trends. One such set of data has been developed by Mercer Human Resource Consulting, the world’s largest human resource management firm.

I developed a benchmarking procedure to access this salary data for different job ‘families’ and to enable this data to be compared to academic salaries. This benchmarking procedure was conducted both in Australia and internationally. It developed private and academic salary comparators for the academic and private sectors, and was subsequently validated in discussions with the executive deans of
a university from the sample of universities selected for interviews. This chapter from the larger academic salary research report, incorporating this major academic salary research methodological innovation, is also included in the portfolio in Chapter 5.

### 1.3.6 Comparative Salary Data

The research presented in the portfolio incorporated major methodological advances in developing salary comparisons. Data were gathered on current private sector salaries for a selection of professions in Australia, Canada, the United Kingdom and the United States. These salaries were compared with academic salaries in their respective countries. The data were collected along with the job descriptions of the positions nominated. Once the benchmarking presented in the portfolio was developed, deans at the university mentioned above were asked to validate the job descriptions used in the salary benchmarking and to lend validity to the salary comparisons made.

The project team arranged a schedule of visits to twelve universities to interview senior management about their academic labour markets and to identify their industrial relations practices in the areas of salary supplementations and loadings and also any difficulties they had in attracting staff. The questions are presented in Chapter 5 of the portfolio. These interviews revealed substantial differences among the universities in the labour markets in which they operate and also the degree of difficulty they experience in filling positions and retaining staff and also the extent to which they offer supplementary loadings and other inducements in order to fill academic vacancies.
1.3.7 Development of Benchmarking Methodologies

The majority of studies on academic salary relativities have been of a quantitative econometric nature (Marginson 1991, Lombard and Zappala 1990, Zappala and Lombard 1991 and Horsley and Woodburne 2003). Normally such studies are valid and reliable when investigating closely defined and specified phenomena, especially where economic relationships can be examined and established empirically. The other distinguishing feature of these econometric studies is their reliance on ABS data as the basis for the econometric and time series data that are usually developed. The last two decades of the 20th century saw the emergence of human resource management firms which could provide advice for the public and private sector, develop remuneration studies and also advise on how to attract, select and maintain human resources. Worldwide, Mercer maintains a database of over 300 000 private and public sector positions, together with remunerations details and job descriptions. I developed a research brief and methodology requiring Mercer to organize the position database into job ‘families’;

- that reflected academic disciplines;

- private sector fixed salaries; and

- benchmarks that compared these fixed salaries to academic salary scales.

This research in this portfolio provided findings and discussions from an innovative methodology that creates a reframing of academic salary relativity research.
The complexity of developing new data and making valid salary comparisons were identified as key problems in this study of academic salary relativities. As a result the research required new methodologies to allow for the generation of new data. The research presented in the portfolio contains the new form of private sector/academic salary benchmarking that I conceptualised to overcome the methodological problems experienced in this area.

The aim of the research was to consider the fundamental issue that lay at the heart of this project: to what extent, if at all, can valid comparisons to be made between academic salaries and salaries in other occupations, given the differences in qualifications, responsibilities, experience, working conditions and job prospects? Further complexity was added because while it was possible to talk about salaries for all academics because of the common scales in the salaries agreements used by Australian universities, it was not at all clear that there was a single academic profession or that there was even a single market for every academic specialty. The strength of the benchmarking approach was its ability to overcome some of these problems by comparing private sector and academic salaries in a range of job ‘families’ and then assessing and evaluating the job descriptions and duty statements of these positions. The main question that Australians ask about their salaries is how they compare with those of others performing similar duties. This concept of comparative wage justice is ingrained in the Australian industrial relations system. It has taken this research to develop data that can be used to make such comparisons accurately, reliably and validly.
1.3.8 Conclusion: Core Issue 3

Core Issue 3 refers to the way that new research methodologies and the data they generate reframe debate in communities of practice. These methodologies and the findings they have generated have challenged existing codes and norms of debate, transforming the discourse in which the debate has previously occurred. As an example, prior to this research, the teaching standards movement in Australia has been characterised by debates on the development of standards frameworks of the type discussed by Ingvarson (1998). The study of other and cognate professions through benchmarks refocused attention on teacher preparation and professionalism in any consideration of the structural aspects of the profession. This debate ultimately concerns how the profession is managed and organised.

In the introduction to the portfolio, use was made of the metaphors of ‘passport’, ‘visa’ and ‘territory’ to frame the diversity of terrains and communities of practice that the research in this portfolio covers. Jasman (2002) argues that the use of such metaphors is important in illustrating the features of an activist professional learning journey. Travellers engage in journeys across borders in different ways, in the same way that professionals engage their professional contexts in different ways. Some travelers are not only trekkers or explorers, but can be thought of as cartographers. They negotiate difficult and unfamiliar terrains and borders. Despite inadequate maps to show the way, they chart their travels, record their journey and identify new features of the environment. These cartographers map the new terrain, research its difference from existing well understood terrains and encourage new explorations. Activist professionals also cross borders in this cartographic way in order to make future crossings easier for others. They approach new territories from the point of view of similarities and differences that can be used to
facilitate exploration by others. In the benchmarking studies of other professions and academic salary relativities, the research has acted as a guide on how to open new doors in unfamiliar terrain so that others can identify its features and chart new, more promising directions.

Elbaz-Luwasch (2001:83) has noted that 'the metaphor of border crossing often highlights the issue of voice. Who is entitled to speak where, in what language and to what audience, and who needs to listen, are issues brought to the fore by consideration of border crossing'. The debate over standards, institutes of teachers and boards of teacher registration has been stimulated by the discourse arising from examining other professions. The analysis of the key ways other professions structure themselves, conduct training, manage induction and mentoring, organise continuing professional development and undertake professional regulation and apply disciplinary procedures, have revealed new insights that have helped shape and transform the discursive nature of the debate.

Similarly, the new data generated on academic salary relativities has refocused the debate on the future of the academy. The decline of salary relativities at the lower and upper end of the academic salary scale ultimately raises issues relating to how human resource management in the higher education sector needs to respond to price signals in the labour market. The debates over the future of universities have been focused on funding, enterprise and entrepreneurship. The implications of this research raise the human resource situation of universities as a key issue in how they are to be managed, funded and organised in the future.
CORE ISSUE 4

What new networks and alliances have been enacted through strategic positioning?

“Never again will a single story be told as though it is the only one”

John Berger 1995

The fourth core issue to be addressed in this portfolio section explores how transformation is generated through being responsive and proactive, and how strategic positioning is used to create new networks and alliances for the improvement of practice in teacher education. This section outlines the role that the author's research and practice in case-based teacher education has played in catalysing the community of practice in teacher education. The publications presented on this core issue are contained in Chapter 6 of the portfolio.

1.4.1 Case-Based Teacher Education

For the purposes of this thesis, strategic positioning refers to the ability to 'identify issues and opportunities in advance and to be able to communicate to various stakeholders and opinion makers the contribution an activist teaching profession can make to the common good' (Sachs 2003:5). In teacher education, strategic positioning requires the development of new networks and the organisation of collective responses in reading the strategic possibilities for innovation and improvement in the teacher education project. Smith (2003:24) refers to strategic positioning in a slightly different way.
In general, if we want to achieve learning in schools developed around social constructivist principles we need to model these and explicitly teach them in teacher education programs. Merely preaching about them will not be sufficient. As Jackson (1968) established a long while ago, learners learn what they spend a long term doing; teacher educators need to "walk the talk". If we want teaching to be based around becoming an expert learner in a community of learning practice, then this must be at the heart of teacher education.

In 1996 the Faculty of Education at the University of Sydney established a new postgraduate pre-service Master of Teaching degree. At the same time the Faculty of Medicine developed a new problem-based postgraduate medical program. At the invitation of the Dean of the Faculty I was appointed to develop and co-direct the new postgraduate Master of Teaching.

This new postgraduate degree was an important innovation in teacher education both nationally and internationally, its distinguishing feature being that it constituted the initial attempt to provide an entirely case-based teacher education program. The proposed program involved not only extended practicum experiences for students, including an internship in schools, but also new inquiry-based teaching pedagogy based on teacher education students exploring cases written by classroom teachers. The designers of the program utilised socio-cultural approaches in constructing the curriculum and pedagogy of the new program. Student teachers developed communities of practice in their inquiry into the situations of teaching. They worked with more expert 'others' (experienced teachers) in facilitative small groups and explored their prior learning in relation to common problems and circumstances that arose in teaching. The case-based pedagogy first enunciated by Shulman (1986) in his seminal work 'Those who understand: knowledge growth in teaching' (Shulman: 1986) was the model and theoretical framework used.
1.4.2 Case and Problem-based Professional Education

Unlike other teacher education courses which use cases as exemplars with key principles supported by questions and references (Brady 2001), case analysis in the Master of Teaching was open-ended and inquiry-based. Students explored their own responses and had the opportunity to use the case as an inquiry trigger to stimulate research and reflection on appropriate teacher behaviour and action in a range of teaching situations (Foster and Horsley 1999; Walker, Hendry and Horsley 1997; Smith 2002, 2003 and Ewing, Smith and Horsley 2003). Research on this Master of Teaching has been published widely by authors in a range of professional and academic communities of practice, (Sachs 2000; Ewing 2002; Ewing and Smith 2002; 2001; 1999; Hatton and Hunter 1999; Forster and Horsley 1999; Ewing, Smith and Horsley 2003; Walker, Hendry and Horsley 1997; Smith and Ewing 2002; and Smith 1999, 2000).

As the co-director of the program, my brief was twofold. One was to draw together teaching teams from across the three Schools within the Faculty to develop case study materials. The second was to convince a sometimes cautious staff, who were well versed in traditional teacher education pedagogy, of the importance of designing course material that was inquiry-based. At the same time the Faculty of Medicine was also developing a problem-based post graduate medical course, placing diagnosis at the core of their professional training. Working together across both faculties, the course managers more easily assisted staff to retrain so as to play new and different pedagogical roles in professional education. My brief included the development and management of the cases. These were written by 40 practicing teachers, and subsequently published as the major resource for the Master of Teaching.
Three major pieces of published research resulting from this project are included in Chapter 6 of the portfolio.

1.4.3 Research on Case and Problem-based Professional Education

The first study reported on the implementation phase of the case-based teaching and problem-based medical programs. One of the first issues arising in the teaching of the courses was to document and describe the nature of student-centred professional learning and the development of community of practice professional groups for analysing teaching cases or medical problems. The pedagogy of the medical and teaching programs was in stark contrast to the pedagogy that students had experienced in their undergraduate courses. The open nature of the inquiry and the collegial nature of discussion and problem-solving was compared in both Medicine and Teaching, and then to document the structure and record student experience of open ended case inquiry and problem solving. The research methodology used in this study required the facilitators to observe and document student responses and compare them across the teaching and medical degrees. The findings of this research were reported at a number of teacher education conferences (Cusworth, Smith, Horsley and Walker: 1997, 98) and played a seminal role in encouraging other teacher education institutions to develop similar Master of Teaching degrees, based on inquiry and case-based methods.
The second piece of research presented in Chapter 6 explored how students learn from cases. Research undertaken by Feiman-Nemser and others (Feiman-Nemser 2000, Lougran 1999 and Mitchell and Mitchell 1997, Russell and Bullock 1999) demonstrated the ways that interactions within communities of learners contributed to learning in individuals. As well, Morine-Derschimer's (1996) research on the use of cases in teacher education, demonstrated that the ways case-use was structured, had a significant impact on student learning from cases. To explore case structuring and its impact on learning, I designed a research project that analysed the role case-use played in developing understandings as students responded to a case of a teaching situation. The methodology developed allowed the researchers to investigate how learning from individual reactions to cases compared to small group and large discussions of the same case. The findings had a significant impact on the way that cases have since been structured and implemented in the Master of Teaching program, and in planning e-learning experiences as the cases are developed for a flexible learning environment.

The third research project presented in Chapter 6 reports on an overview of research on the use of cases in the Master of Teaching. This research synthesised the findings of a number of studies on case-based inquiry in the Master of Teaching program since it inception in 1996. This project had critical implications for case-based teacher education at Sydney University.
1.4.4 Conclusion: Core Issue 4

A crucial element in the success of the postgraduate medical and education courses at the University of Sydney was the new network that allowed medical and teacher educators to share, cooperate, research and position. The development of new case and problem-based inquiry required the development of new alliances between medical and teacher educators. The research on case-based inquiry in teacher education has been disseminated widely. It has allowed teacher educators from a range of institutions to come together to create new networks to promote innovation in student-based and workplace based professional education. In this way the research presented in the portfolio has been foundational in creating new networks and alliances that have acted to promote a strategic position: case and problem-based professional education.
CORE ISSUE 5

How has evaluation and reflection developed a wise and insightful grounded professional knowledge?

“Thinking about using computers in education means thinking about education”

Alan Kay 1982

The final core issue to be addressed in this section of the Overarching Statement is how evaluation and reflection can be used to provide and disseminate insightful grounded professional knowledge. This section outlines the research that the author has undertaken on the embedding of ICT in classroom practice and through action-research and action-learning analysis, has developed professional development principles that have been adopted by many schools and school systems. The publications presented on this core issue are contained in Chapter 7 of the portfolio.

1.5.1 Introduction

Integrating information and communication technologies (ICT) into teaching, and embedding ICT into teaching and learning is one of Australia’s current educational challenges. Nationally, the Ministerial Council of Education, Employment, Training and Youth Affairs (MCEETYA) endorsed The National Goals of Schooling for the Twenty First Century (DETYA, 1999) which states that ‘when students leave school, they should be confident, creative users of information and communication technologies’. Each Australian state has further developed expectations that educators and education systems will accept their responsibility for supporting
Australia's efforts to compete in a technologically-enabled global market place. This can only be achieved by boosting technology competency levels and the skills and understandings of students through the use of technology in teaching and learning. It is felt that technology not only offers new teaching and learning strategies but makes new knowledge possible.

At the State level, the integration of Information Technology outcomes into the broad range of primary and secondary curriculum and syllabus documents has been proceeding rapidly (Board of Studies New South Wales 2001). In New South Wales, the recent revision and introduction of new Stage Six courses for the Higher School Certificate further emphasized the learning outcomes for students in the use of technology across all Key Learning Areas. At the same time, the NSW Minister for Education has announced the development of Computing Skills Assessments for students in Years 6 and 10 and this will be introduced in 2005 (Board of Studies, 2001). My research has been conducted with teachers and schools, through professional development, to embed and integrate technology into their classroom teaching (Horsley 1996; 1998; 1999; 2000; 2001; 2002; and 2003). The publications presented in Chapter 7 of the portfolio have been chosen to detail the research which has the aim of supporting the role professional development can play in assisting teachers to embed technology in their teaching.

1.5.2 School Adoption of Technology

It would appear that externally driven demands will leave teachers with little choice but to embrace technology as part of their teaching repertoire. There is a growing expectation by parents, the community and policy makers, that teachers will be proficient in the use of technology and its applications in the classroom. It is currently
being assumed in terms of the student outcomes identified within syllabus documents K-12 (Board of Studies New South Wales).

However, not all technology influences are external to the school. According to Jones (2002:4)

*Effective teachers have always sought to improve classroom pedagogy and enhance the learning outcomes of their students. Teachers have a long tradition of developing a community of practice that allows them to consider innovative teaching strategies and exploit them for the benefit of their students. Teachers are certainly aware of the fact that technology has the capacity to revolutionise the nature of the learning environment and the ways in which learning is accessed. They are also aware that technology has the potential to enhance the learning outcomes of students as well as improve students' enjoyment and participation in the learning process. Many teachers have been exploring these ideas within their own classrooms and extending their own understanding of the role technology can play within the educative process.*

Often teachers only need a minimum of support as they experiment with integrating technology into their teaching and attempt to gauge its impact on their students. My research (Horsley 2001) presented in Chapter 7, chronicles school-based professional development programs that were designed to assist teachers to embed technology in their teaching. In the late 1990s I co-ordinated a number of school-based technology research projects where teachers were supported by expert 'others' to embed technology in their teaching. They did this by offering their students online units of work in traditional school classrooms. The projects were managed in partnerships with the school, the Faculty of Education at the University of Sydney and appropriate professional teacher associations.
The teachers were encouraged to undertake action research and action learning research on their innovations and to present their findings to professional association conferences.

I also researched projects on:

- teacher perceptions of their changing roles in technology embedded virtual classrooms,
- student perceptions of online learning and
- professional development design to assist teachers to embrace technology in their teaching of subject matter.

The data collected from these projects resulted in the publication of a series of books (see Appendix 3) on using ICT in English, Business Studies, History and Primary Education. The research reported in Chapter 7 has been disseminated at professional teacher association conferences in English, History, Business and Economics and Primary education. The research has enabled a significant number of schools and school systems to design appropriate professional development to assist teachers to integrate technology deeply into their teaching. In particular the research has demonstrated that certain professional development principles are necessary for teachers confidently to embrace technology in their teaching. The implications of my research are clear. Unless professional development for teachers is designed around the principles identified in the research presented, it is unlikely that teachers can embrace technology in their teaching.
1.5.3 Research on The Failure to Adopt Technology in Teaching

There is a considerable literature on the limited use by teachers of technology in their teaching (NSW Audit Office 1999). Despite national and state plans and projects and an unprecedented level of investment in technology, technological education and the professional development of teachers, evidence on the actual level and scale of integration of ICT and the embedding of ICT into teaching and learning has been problematic. For example when Brown (2000) surveyed 50 teachers nominated by their schools as proficient in the use of IT in the classroom, the results clearly demonstrated that only 40% had access to the internet in their own classrooms while few reported that they had succeeded in integrating the world wide web into their teaching.

A major OECD study (2004) of technology use in schools in fourteen countries found that despite significant investment in computers and professional development, use of computers in the classroom is limited and disappointing. A study by the NSW Audit Office (1999) reported that although hundreds of millions of dollars had been spent on equipping schools with technology, very few teachers used technology in their teaching and learning. It may be tempting to imagine that technology, especially the Internet, is revolutionising teaching and learning, changing teaching practice and student learning, and allowing students to improve their learning outcomes. However the picture emerging from research studies contradicts some of these claims (OECD 2004). Increasingly, the view expressed by Dede (1998:323) is being echoed by researchers and experienced practitioners in ICT.
**New technologies can help transform schools but only if they are used to support new models of teaching and learning. The best role for technology is to make community centred constructivist classrooms sustainable for the teachers.**

Many explanations have been proposed for the lack of integration of technology into the school curriculum. Sheingold and Hadley (1990), maintained that three conditions need to be met before successful technology adoption could be expected these being accessibility of computers for teachers and students;

- support for teachers in learning and planning the use of technology; and

- a school structure to encourage its use (Sheingold & Hadley, 1990).

Lee (2000) has argued that too little professional development has been provided for teachers who use ICT. Whenever provided, professional development activities are too generic, while too much emphasis has been placed on skill-based training without paying adequate attention to the learning theories underpinning the use of technology in education. Professioally-led change, as outlined in this portfolio, unlike most short term professional development strategies, seeks to locate professional development planning in the totality of the innovation and its relationship to current practices and structures.

The research presented in this portfolio was developed around long term teacher education and professional development projects that sought to provide continuing support to teachers as they sought to embed ICT into their teaching and research the impact of their changed pedagogy on their students' achievement.
Cuban (2001) and Brabazon (2002) have forcefully claimed that the reason for the failure of schools to take up the technology challenge is that the technology in the curriculum movement ignores the real information needs of learners in educational contexts. In particular, they argue that unquestioning acceptance of new technologies that influence school outcomes and pedagogy, is both foolish and dangerous.

My research reinforces these concerns. It explored the information needs of teachers and learners and then investigated how these needs were linked to the use of print and technology resources in the classroom. I found that in schools and classrooms where teachers are experimenting with online pedagogies and online courses, print based materials were still being extensively used. This research has raised the issue of information needs of learners and how these may best be met. It also raised the wider insights that seem to be lacking in the discussion of the use of technology in learning. Activist practitioners develop insight as they conduct action research and action learning. Insight is the central component in wisdom. Profession-led change places a high priority on professionally-grounded insight. This insight results in professional wisdom, the hard won experience in researching classroom innovation in naturalistic settings. The introduction of technology into the classroom implies a new pedagogy, and as a result, creates new knowledge. The research presented has been influential in the profession, in that has called into critical question the way new technologies have been introduced into the classroom.

1.5.4 New Technology, New Pedagogy, New Knowledge

The application of electronic learning technologies in everyday classroom interaction requires a complex and difficult process of change (Johnson 2001). For schools there will be a need to reshape long standing structures that have generally
supported disconnection, separateness and division (Warseley, 1997). Therefore, no one doubts the very real challenge the introduction of ICT is raising in what, until the last decade, was a fairly unchanged learning environment.

Planning for embedding learning technologies requires a rethinking of the whole school curriculum: its purposes, the needs of students and the community, theories of learning, school structure and organization. How one proceeds depends very much on how one views technology (Goodyear, 1999). For some, the process is incremental, with new technology being integrated progressively into pedagogy and curriculum. These educators believe that as with other technologies, computers simply support the pedagogy rather than changing the nature of learning itself (Bigum, 1995). For others, the emerging technologies represent a significant paradigm shift, with the whole process of learning - how information is accessed, the construction of knowledge and the communication of findings - being transformed (Downes, 2001). This is a change, in some researchers' opinion, which is as great as that which occurred after the introduction of the printing press.

Many educators report that there is the need for significantly different approaches to the teaching and learning process in an environment that utilizes the various technologies (Downes, 2001; Spender, 2001; Cuttance, 2001). What these educators suggest goes far beyond a minor modification of teaching practice. New competencies are required that can be quite confronting for teachers. Fullan (1991) points out that the way teachers are trained, the way schools are organized, the way the educational hierarchy operates, results in a system that is more likely to retain the status quo than to accept or welcome change. He further argues that, when change is attempted under such circumstances, it often results in defensiveness, and superficial or, at best, short-lived pockets of success. The building
of a new commitment to a new set of competencies for teachers, he concludes, would be a very fragile process and one requiring significant professional support.

In this context it should be reiterated that teachers' actions and instructional decision in the classroom are driven substantially by their beliefs. For teachers there are a number of technological ideas, infrastructures and contexts to navigate as they carry out the roles of teacher, learning facilitator, student mentor, work colleague, employee and member of a profession (ACEE, 2000). Professional development is an essential element in encouraging staff to develop new ways of thinking about curriculum and its effective delivery (McRae, 2001).

The research of this portfolio therefore, reaffirms the view that in defining learning technology competence, system authorities and other stakeholders need to take a holistic view of teachers' lives and not reduce such competencies to a list of technical skills or even the pedagogical, administrative and curriculum skills that ignore the connectedness between the roles and circumstances of teaching (ACEE, 2000). Learning is a relationship and this is as true for teachers as it is for their students. Professional development that is school based, responds to the specific subject and contextual needs of teachers and requires a collegiality that is based on a continuous, concrete and precise dialogue about ongoing teaching activities. It requires that participants observe and provide feedback to one another in action; that they take part in planning, designing, studying and evaluating curriculum; and that they teach one another what they know about teaching and learning. It is widely accepted that these are all essential elements of any effective staff development program (Sharpe 1997).

When teachers are encouraged to work in professional learning teams (Johnson 1998) it would appear that the support of the group becomes critical in working
through some of the phases of implementing any change in teaching effectively. My research has shown that teachers only gradually adopt technology in their teaching as they grapple with restructuring their pedagogy to utilise the new information medium. However, I also found that teachers, as a result of observing how colleagues adopt technology, even though they will plead lack of time and profess to see only the disadvantages, steadily move to a situation in which they themselves begin to introduce technological innovations.

1.5.5 Conclusion: Core Issue 5

According to Richardson (1998:23) ‘while we have had research evidence on the characteristics of effective staff development programs for some time, these features are not commonly seen in practice’. The research presented in the portfolio supports Richardson's view that successful professional development will:

- be long-term and have built-in follow-up measures;
- encourage collegiality;
- foster agreement among participants on goals and vision;
- have a supportive administration;
- provide outside support;
- acknowledge participants' existing beliefs and practices; and
- be grounded in the insight that professional being to a learning context.

The portfolio includes research and development projects which highlight the implementation of these principles in action research and long term professional development in schools.
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Overarching Statement


CHAPTER 1 Overarching Statement: Activist Profession-Led Change


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CHAPTER 1 Overarching Statement: Activist Profession-Led Change


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Chapter 2

Cultural Learning, Cultural Reflection in Teacher Education
CHAPTER 2

Cultural Learning, Cultural Reflection in Teacher Education

2.1 The Publications


These publications comprise one paper in a refereed journal and two refereed conference papers, and are presented in chronological order. The paper by Horsley and Butland (2003) was presented to an audience of over one hundred teachers and policy makers at the annual Equity 4kids conference which supports the New South Wales priority school program. This is an equity program designed to develop educational programs to support the teaching of the disadvantaged. The conference showcases such priority schools programs. This paper attracted community support and participation from two communities (Samoan and Tongan). Four schools were represented in the audience by teachers, who later joined the Tertiary Awareness For Pacific Islanders (TAPA) program at the University of Sydney. This paper also was used widely in policy formation as it represented one of the few completed research studies on current Polynesian (Pasifika) Australian students.

The two papers on cultural reflection in teacher education (Horsley 2003, 2004) present research explicating the concept. These papers demonstrate how teacher education courses requiring interaction with South Pacific Island students and communities can develop critical cultural reflection. This concept is extended in the final paper (Horsley 2004) which explains how different modes of incorporating cultural diversity into teacher education influence the development of critical cultural reflection in teachers.
2.2 Research Purpose

Perry (1970) first elaborated the current dominant model of intellectual and ethical growth in tertiary students. This model proposes that undergraduates' thinking and moral understanding matures to higher levels in four stages: (1) dualism; (2) early multiplicity; (3) late multiplicity; and (4) contextual relativism. At each stage students express different views about knowledge and the roles they see for the instructors and for themselves. Perry's research on undergraduate thinking had significant implications for the design of learning environments, teaching styles, the provision of teaching and learning resources and the structuring of courses. The central idea in Perry's conclusion was that in designing undergraduate courses, tertiary educators needed to understand students' prior learning, their understandings and the learning context. At the time that Perry examined the views of students from diverse cultural backgrounds, there was little research on how cultural learnings might influence students' intellectual and cultural understandings.

Perry's original research foreshadowed the emergence of a research paradigm in teacher education focused on studying the conditions under which social and critical reflection is achieved by teacher education students. Critical reflection, with its concern for equity and the effects of pedagogy on student learning, is the main outcome of most teacher education programs. In researching critical reflection, a number of scholars (Hatton and Smith 1996) have developed methodologies that have enabled aspects of reflection such as reflection in action and reflection on action to be measured. This research however, neglected aspects of culture in reflection, and the rise of new theories of indigenous knowledge which postulate that much essential educational knowledge is cultural and is culturally contextual.
Cultural aspects of teacher education about student learning and cultural reflection has received much less research attention. The cultural reflection model presented in this portfolio is one of the first attempts to measure how teacher-education students respond to cultural learning. The purpose of the research presented here was threefold;

1. To describe the development of a new teacher education program based on a cultural learning in community settings;

2. To measure the impact of this learning on the way student teachers reflect on culture; and

3. To evaluate different models of providing a cultural dimension in teacher education programs.

2.3 Research Methodology

The research presented employed a range of qualitative and benchmarking research methodologies. Although the paper discusses different models of providing a cultural dimension in teacher education, the benchmarking research on which it was initially based was carried out prior to the research on student-teacher reflection.

The initial research employed a process benchmarking methodology. Process benchmarking compares operations and systems for different processes in these different contexts, places or situations (Zairi and Ahmed 1999). The process benchmarking initially proceeded through an examination of the cultural dimension in teacher education programs presented at the Hawaii International Conferences
(Horsley 2003, 2004). In these conferences there were separate streams of papers on culture and learning and on teacher education programs designed to incorporate cultural learning. In these varying sessions a number of conference participants explicited the way in which their teacher education programs included cultural learning. Participants established a community of practice concerned with cultural learning in teacher education, teacher programs were shared and new programs identified and analysed. The research that I undertook examined over 20 teacher education programs in terms of five criteria; courses including culture and learning, quantity and quality of community links and experiences, immersion in target cultures, opportunity for practicum experiences in schools with culturally diverse student groups; and use of identified culturally contextual teaching methodologies appropriate to diverse cultural settings. This research identified engagement in the culture of the community as a key construct in conceptualizing a cultural dimension in teacher education.

The teacher education program presented in the portfolio, describes an engagement model of cultural learning in teacher education. Research on teacher reflection has employed a range of qualitative methodologies, typically action research and varieties of discourse analysis. The research on cultural reflection by student- and beginning-teachers in the portfolio employed a discourse analytical framework. The student teachers were asked to write reflectively about their new cultural learning and its implications for teaching Polynesian Australian students. The responses were analysed using the methods outlined by Smith et al. (2002) in researching reflective student writing.
2.4 Co-authorship

The chapter incorporates two papers authored by Horsley and one co-authored paper. The teacher education course and community links were conceptualized, developed and researched by Horsley. For the paper reporting on the school experiences of Polynesian Australians, the co-author Butland wrote those sections reporting students' attitudes and concerns, using student data gathered by Horsley. Horsley was sole author for the other sections of this paper.

2.5 Recognition of the Research

Following a presentation of an earlier version of this research (Horsley, 2003) at the Hawaii International Conference on Education, the author was invited to present the findings of research on Polynesian Australian students at the Loua Research Association Annual Conference in early 2003 (Horsley 2003). The Loua Research Association is an international institution concerned with research on Tongan society and culture. The findings received very positive responses from the Tongan Community and Tongan researchers and formed the basis of a web-based discussion on cultural learning and education.
The research methodology and findings were also presented at a seminar on research partnerships at the University of Waikato, in New Zealand. Considerable interest has been expressed in the research by New Zealand teacher-education researchers. Timoti Vaioleti, from the University of Waikato has adapted some of the teacher education principles in the TAPA programs emanating from the University of Sydney into new teacher education programs at the University of Waikato.
The author also presented the research findings on cultural reflection and cultural learning as an invited speaker at the University of the South Pacific in August 2003. The presentation has been developed as a multimedia learning tool by the multimedia unit for students studying ED 153 (Education and Society) at the University of the South Pacific.

In Australia the research has been used by schools as the basis of an Australian Government Quality Teacher Project to develop action learning research projects in order to improve the teaching of Polynesian (Pasifika) Australians in a number of schools. These projects seek to help teachers develop more culturally responsive learning environments.

The educational programs for the community developed by the course acted as a springboard for the development of applications to fund other educational programs for their students. The research conducted on the school experiences of Polynesian Australian students (Horsley 2003) was used as the theoretical basis for a new program established by the Premier's Department in New South Wales to develop a new parent-school partnership program. For some schools Tertiary Awareness for Pacific Islanders (TAPA) programs, student days and primary-secondary transition programs, catalysed the growing number of Polynesian Community school-liaison officers working in government schools, to develop new education programs in their schools.
2.6. Prior Research

My activist professional journey in leading and framing educational change began as a co-ordinator and consultant in a United Nations Development Project (UNDP/IOE/UNESCO) in the schools of the South Pacific. This was a regional pre-vocational curriculum development project which aimed to initiate or strengthen curriculum development, available resources and teacher training in Home Economics, Business Studies and Industrial Arts at the junior school level in the South Pacific countries included in the University of the South Pacific (USP) Region. The project was funded by UNESCO through UNDP and implemented by the Institute of Education at USP during a four year period 1983-87. This project assisted national governments and ministries throughout the region to develop 28 new syllabuses for these subjects, to write 60 textbooks for student use and to mount over 40 in-service courses to help teachers prepare for teaching them. As deputy director of the program, I was responsible for the development of business studies curricula, teaching and learning materials, professional development and teacher training. In Business Studies alone during 1987 and 1988 over 80 new commerce classes were formed (in upper primary or lower secondary schools) in the six countries that developed Business Studies Courses (Tuvalu, Tonga, Cook Islands, Western Samoa, Niue, Vanuatu).

The curriculum benchmarking analysis developed in this early stage of the project was later applied to vernacular education resources in vocational education. As the project proceeded it became essential that textbooks and other teaching and learning materials be translated into local vernaculars such as Tongan, Samoan, Niuean, Maori, Tuvaluan and Marshallese.
This benchmarking was also of a product type. All the vernacular language resources in each nation were analysed from the perspective of commercial vernacular vocabulary and concepts.
This process required me to explore new linguistic territory, and ultimately involved language planning by national governments, community leaders and guardians of national languages. These translations had a profound impact on commercial studies in the South Pacific Island nations. As the project proceeded it was realised that existing research on indigenous business was limited and sometimes inaccurate. This forced the project teams, teachers and curriculum developers to investigate community business practices, and to involve local business leaders in the development and teaching of the new courses. Guiding these teams in the project forced me to explore another terrain, that of islander business practice. In Vanuatu, this ultimately led (in 1995) to my development of a business college (Biriwa College) on Espiritu Santo, with two Ni Vanuatu business partners.

Biriwa Business College in Luganville, Espiritu Santo, established by the author in 1995
In planning for the design of these Pacific Islands projects I was mindful that the development of new curricula, research on business practices in island communities, systems of teacher training and professional in-service and development were culturally based and developed within the context of traditional cultural relationships. A major approach of the project was to provide activist professional leadership in an islander teacher cultural context. Social and teacher professional networks and support require access to key cultural institutions. Central to the experience of how teachers interact to generate their personal knowledge and how they are influenced by institutions around them is the cultural frame that gives meaning to thought and action.

Curriculum and curriculum development was also contextually and culturally bound. At all times curricula were designed to affirm the validity and legitimacy of cultural experience by acknowledging the importance of honua and whanua (community in Maori). Associated pedagogies were informed by South Pacific cultural metaphors, concepts and principles. Curriculum development was based on reflections of poto (wisdom in Tongan). The process involved cooperative and collegial sharing of experience and a cultural community of practice. The resources developed validated islander experiences and world views, using culturally appropriate narratives as a structuring principle.

It was these early experiences in affirming Pacific cultures and business knowledge that provided the genesis of insight that later led to the projects on cultural reflection in teacher education when I returned to Australia to take a position as a leader in teacher education.
PAPER 1

Australian Students of Pacific Islander Background Encounter with Schools

ABSTRACT

Australian education, in spite of a policy of multiculturalism, is struggling to meet the needs of Pacific Islander background students who represent a growing minority group entering the Australian school system. Australian schools and teachers have found it difficult to respond to the specific cultural orientation and learning needs of this group of these students. Young people of Pacific Islander background represent a significant proportion of students exhibiting low achievement, disengagement and alienation.

This paper will report on the hopes, aspirations, problems and difficulties that these school students have expressed about their schooling in New South Wales. The paper will also report the views of ethnic community workers and educational liaison officers on the progress and challenges facing the students and families.

For the last 12 years the Faculty of Education, at the University of Sydney, has managed teacher education programs designed to enable beginning teachers to understand and work from the cultural perspective of students of Pacific Islander background. Through student teachers participating in, secondary school student forums, homework study centres, parent forums and Tertiary Awareness Programs for Polynesian Australian student.

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The classroom is important only as it is understood in its relation to the society and culture of the children who occupy it, and teaching will be effective, only as it is related to society and culture. Redfield 1973

Culture and Teaching

For the last 50 years, Australia has been a country of significant inward migration. Education systems in each of the Australian states has struggled with an appropriate policy response to the diversity that different cultural groups presented to a school system that had been conceived and organized on a middle-class, Anglo-cultural model of schooling. The emergence of multiculturalism as a positive value that should be encompassed in all the practices of schools requires teachers who are able to step outside their own ethnic orientation, and recognise the way in which cultural understanding imbues the teaching-learning process.

Barrera (cited in Florio-Ruane, 2001) uses the concept of ‘culturallectomy’ to refer to the processes of exclusion of the culture and non-school lives of students from what happens in school. Secondary teachers see the schooling process as one of teaching their subject and maximising the academic outcomes of their students. Outcomes are demonstrated through assessment processes that bear no relationship to the cultural context of the young people who are their students.

Teachers’ practices shaped by unquestioning of the hegemonic cultural perspective, will provide explanations for school failure by students from diverse cultural backgrounds in terms of intrinsic deficiencies, of the individual, the cultural group or in terms of the failings of the family from which the student comes. These explanations reflect a deficit view of the contribution of cultural diversity to students’ learning. (Connell, 1993; Sturman, 1997).

Cultural differences are problems rather than resources for learning. Pupil performance is the result of the two primary factors of pupil psychology and family socialization. Cultural background is largely determinant of
school achievement and future socioeconomic standing. (Floio-Ruane, 2001).

Schwarzer’s research (1999) into student teachers’ beliefs about teaching and learning during their in-school practice confirms this deficit model in beginning teachers. What student teachers need are experiences which when reflected upon enable beginning teachers to de-construct taken for granted understandings of schools and cultural diversity. Shifting educational practice so teachers are able to work in cooperation and with school communities, towards social justice, presents a challenge to teacher education.

Cross-cultural experience should unsettle and transform us. Sometimes the process involves loss, sometimes it yields change; it invariably involves risk and requires engagement. (Florio-Ruane, 2001).

Teacher educators have attempted to develop curricula and experiences that are aimed at disrupting teachers’ taken for granted cultural assumptions. McIntyre (2002) writes of disrupting the ‘dysconscious racism’ of American teachers through a process of ‘unlearning whiteness... where teacher perspective’s about teaching and multicultural education are challenged to go beyond the economy of the stereotype.’ (McIntyre, 2002).

Pacific Islander Australian Migration

There are few teachers of Pacific Islander cultural backgrounds employed by the Government school system in New South Wales. However, Australian students of Samoan, Tongan, Cook Island and Fijian origin are a growing and identifiable cultural group in New South Wales Schools. Within some working class suburbs of Sydney these groups represent the fastest growing minority cultural group. Already in a number of the school districts in the South Western and Western parts of Sydney, Samoan and Tongan are together the dominant non-English speaking background languages (NESB). For example in the Penrith, Blacktown and Mt
Druitt school districts secondary schools and their associated feeder primary schools Tongan, Samoan and Fijian enrolments have increased significantly. Students of Tongan background have increased by 62% between 1994 and 2000 and Samoan enrolments have grown by over 97 % for the same period. (Carauana, 2001).

The fast growth of these communities has been relatively unanticipated. According to Vao (2002), Samoan migration to Australia began in a substantial way only within the last 15 years. Tongan and Fijian migration began earlier, but large-scale immigration from these communities has only been a very recent phenomena. The path of migration to Australia usually follows a period of extended residence in New Zealand. This period of stay in New Zealand means that families have been exposed to new and different demands cultural demands, including exposure to New Zealand school system. Anecdotal evidence suggests that newer migrants are increasingly arriving from the homeland under the family reunion categories of the Australian immigration system.

For Pacific Island groups like other ethnic groups, the experience of migration is one that sees the community anxious to ensure the preservation of their cultural way. Thus in a study of Samoan immigrants Vao(2002) concluded that migrants place great emphasis on maintaining their Samoan way of life (fa’a-Samoa) and assert that Samoan culture is faithfully maintained in Australia.

Samoans form a tight-knit group with central features of membership ties, extensive gift-giving in the form of remittances to dependants in Samoa and extensive participation in social networks that ritually observe life-cycle events (fa’alavelav).

In the area of the family, there are conflicts between parents and children over discipline and the degree of parental control over children’s lives. Villages and parents fear the loss of control over their children. Many first-generation migrants feel that some of their values and relationships have been turned upside down.
Students of Polynesian Background and the Australian School

Quantitative and qualitative data on school performances and participation indicates the relative performance of students of Polynesian background in Australian Schools. These groups are over represented in suspensions, expulsions and discontinuance compared to other identifiable cultural groups (Hutakau 1999)

The quantitative data demonstrating the academic performance for Polynesian Australian students in the school system is not available. The Higher School Certificate, the School Certificate external test, the basic skills tests and English Literacy and Language Assessment tests do not identify the ethnic origin of students participating in these processes that measure student performance. The lack of data demonstrating ethnic composition reflects both the difficulty of the collection process and the political sensitivity of such information.

However, the performance of students from low socioeconomic background has long been demonstrated to be a disadvantage in our school system. (Connell, 1993; Teese, 1996.) Students from Polynesian background significantly attend schools with high proportion of students from socio-economically disadvantage communities, including schools in the Priority Schools Funding Program.

New Zealand data demonstrates that students of the Pacific and Maori background perform significantly less well at both the School Certificate and University Entrance level (New Zealand Qualification Authority, 2002). This data demonstrates the high level of suspension and “stand-downs” for students of Pacific and Maori background. A similar pattern of suspension and expulsion is of concern to community leaders in NSW.

Further data from the USA demonstrates that failure and underachievement are highly visible for Samoan students in United States Schools (Saleeby, 1980:3). This research found a high failure rate among Samoan students in US institutions and suggested a range of explanations including lack of preparation for higher
education before leaving Samoa, inadequate study skills, lack of proficiency in English, limited culturally specific counselling, and students’ lack of realistic or concrete ideas about the operation of schools and colleges. According to Saleeby these deficiencies had to be surmounted before Samoan students could improve their performances at US academic institutions (Saleebey, 1980:3).

Another aspect of Polynesian Australian education causing particular concern is the low retention (staying on) rate of these groups into senior high school and higher education.

Research undertaken on Cook Island students retention concluded that many Cook Island students linked their feelings about specific subjects to the attitude of the teacher (Lowe et al 1997). The research identified three categories of schooling difficulties mentioned including methods of teaching, literacy and racism. Students offered suggestions for overcoming the difficulties and most of their suggestions included improving the communication channels between students and teachers such as ‘Teachers should relax’. ‘Seniors need more freedom.’ ‘Teachers should talk to us more.’ ‘We need more direction.’ Not surprisingly, the research showed that teachers had little knowledge of the student home culture and most could not actively distinguished between Cook Island students and Pacific Island students in general. ‘There was a general culture of seeing Pacific Island students as a group, unless there had been some necessity to seek out a particular student’s background.’

Teachers felt that Pacific Islanders generally were low-achievers in the school, “Islander kids seem to experience the problems of being late, lack of attendance and truancy. They often do not have the equipment and are not prepared for class. Islanders may lose their belongings, textbooks, bags. Because of their cultural influence and communal lifestyle everything is shared’ (Lowe et al.,1997).

The evidence of disengagement of Cook Island and other Polynesian background students and the mismatch in the perception of parents, teachers and students in relation to the nature of the experience of these students in secondary schools
has been noted in the work of Bishop in New Zealand. (Bishop et al., 2002). This research demonstrates marked differences in the descriptive account and explanations of parents, teachers and students. In the Lowe et al (1997) study, parents of Cook Island students expressed concern that their children were experiencing difficulties and consequently leaving school with limited career opportunities. Teachers, on the other hand, did not express the same level of concern. Students identified a number of concern, such as racism, lack of family support and unrealistic parental expectations in relation to the difficulty in staying on at school.

**Research Methodology**

The research will report on the data collected from students of Polynesian background. It is part of a larger study exploring the parent, teacher and students experience for this minority ethnic group. The study is also focused on evaluating the impact of intervention strategies being implemented to make a positive difference for the students and families as they negotiate the education system.

What follows is an analysis of what these students are saying about their schooling and the relations between school and the culture of their community and home. The context for the collection of the data has been through a course within the teacher education program conducted a Sydney University. This course required teachers in training to engage with the Pacific Islander community in various school and community settings. These settings included student forums specifically designed for the young people to speak out and homework study centres where students, parents and community workers were interviewed and participated in focus groups.

The research held to the principle of ‘self-determination of the participants’ which characterises the work of Bishop with Maori communities in New Zealand. (Bishop et al,2001).
This approach provides for the participants to collaboratively construct their stories in culturally appropriate ways. Using the cultural preferences, practices, and aspirations the community the research seeks to affirm these. The research reflects and is dependent on establishing strong relationships with the community so that students and parents speak openly and honestly. (Prestidge, 2002, p.4).

The experiences and stories of the school students was recorded and subsequently analysed.

**Samoan, Tongan, Fijian and Cook Island Students Speak at Student Forums**

During 1996 and 2000 a number of youth conferences were held for school students of Samoan, Fijian, Cook Island and Tongan background. These conferences were typically of one-day duration and provided a context for students to talk to and with leaders of their communities about issues of concern to the young people. Their discussions around the experience of life and schooling in Sydney reveal the cultural complexity of negotiating successfully participation in an educational system that seems unresponsive to their needs.

In these youth conferences, Samoan young people recognised the strong hierarchical structures within their community and the significant obligatory roles that exist as part of their relationships with chief, church pastor and more broadly elders of the community. Whilst these relationships are valued they are not seen to be appropriate to the Australian context. The cultural conflict ‘pushes kids to become separated from their parents’. The young people felt that their parents should ‘adjust to Australian society’. The obligatory demands by the church for financial support create conflict for the limited funds that working class and welfare dependent families have at their disposal.
The adolescents reported that the positive valuing of the traditional Samoan body image ‘large and fat’ creates a tension, ‘a sense of shame’, in a dominant culture where thin is beautiful.

Young people also expressed a consciousness of the lack of experience of their parents of Australian schools and the education system. They reported that they keep from their parents’ aspects of their school life because the task of explanation is too difficult, ‘they wouldn’t understand’. The gap between the knowledge of their parents and their own experience is too great. The students reported that they perceived that their parents were critical of the liberal and questionable teaching methods that seemed to characterize Australian schools. Often their parents have no experience of the Australian school context and rarely have any contact with the school.

At school, teachers were perceived as being uninterested and lacking understanding of the world of the students from Samoan and Tongan communities. Subsequently when students have problems at school they feel that they do not have the skills to cross the cultural divide between themselves and their teachers. Asking for help with academic work or with the personal relationships needed to successfully negotiate school is not an easy task.

The sense of frustration and alienation is just as strong when school counsellors are encountered. These “specialist” personal are seen to not have the cultural understandings, their not interested in us, they don’t know the Samoan way. School counsellors were seen to be part of the system, siding with the school and consequently unable to serve the interests of students.

Samoan Australian students reported that academic study is not part of what happens at home. Parents do not have the skills and understandings to help their children. However the young people recognised that their parents wanted them to benefit from schooling, our parents want us to be good and to work hard so that we can get a good job... But our parents do not know our schools.
The relationship between school and vocation was broadly understood by parents but parents rarely have access to the cultural knowledge that characterized the students’ schools. The cultural knowledge of the community is not accessed by the teachers and the school as teachers are frequently seen to denigrate the students’ community and cultural ways.

**Paradise or Problem:**

**Teacher Education at the University of Sydney**

In 1995 the Faculty of Education at Sydney University began to develop specific programs in teacher education to prepare new teachers to work with Polynesian Australians. The phenomenon of an increasing body of disengaged young people participating in an education system in which teachers had little knowledge and valuing of the cultural context of these students, presented a challenge to the developers of the new Master of Teaching course at the University of Sydney.

Since 1996, sixteen courses have been mounted and some 250 pre-service teachers have participated and developed skills to work with the growing number of Polynesian Australian students in the NSW education system.

The course, *Paradise or Problem* has been developed to provide pre-service students with the opportunity to focus on the cultures of Polynesian background students. The development of intercultural understanding and practice through interaction and building relationships with students and their families has been the central focus of the course. Student teachers have been required to engage and to establish positive relationships with students and their parents in the context of home and broader community. Active input from leaders in the Pacific islander community has assisted the process of engagement with the community. *Paradise or Problem* has featured a number of interlocking and inter-related components.
Cultural and education learning at university, through lectures and seminars;

- After School Study Centre a facility for Polynesian Australian students and their parents, managed and operated by pre-service teachers designed to support homework and home study;

- A Tertiary Awareness Program for Polynesian Australians managed by pre-service students (TAPA) in cooperation with community leaders;

- Interaction with the community through access to community events and meetings;

- The opportunity to undertake practicum in schools with Polynesian Australian students and the opportunity to undertake teaching internships in Polynesian nations.

The opportunity for student teachers to work with students in non-school contexts was initially achieved through providing the educational support at an after school studies centre. Practicum experiences in schools with large islander populations provided student teachers with the opportunity to take their new found experiences into the school context. Some student teachers participation in internships in Samoa enabled these students to build extensive relationships with the community.

This pre-service model has also been extended to in-service professional development for teachers working in schools with significant numbers of Polynesian Australian students. The acknowledgment of the difficulties that the teachers experience in their work with students of Polynesian background has been the motivation to participate in the professional development. However the course with its emphasis on building positive relationships helps develop understandings that locate the disadvantage not in the student but in the structures and culture of the school system.
The significance of this approach is described by Prestidge in his reference to Bishop’s (2001) New Zealand research. Prestidge says, ‘Deficit theorising’, which locates the blame with students, their whanau, their socio-economic circumstances and so on, is rejected: ‘research approaches that focus on deficiencies will in themselves continue to maintain Maori on the margins of society’ (Prestidge, 2002, p.4).

**After School Study Centres**

The study centres for Polynesian Australian students and their parents were originally established in 1994 and operated in a number of Government schools. In 1996 it was relocated to the University of Sydney, because of difficulties in finding a suitable local location.

The management and operation was shared between the pre-service teachers undertaking the Paradise or Problem course and two Polynesian community groups. The after school study centre was culturally connected. Parents and communities were encouraged to bring their children, allowing pre-service teachers to discuss educational issues with parents, community leaders and students.

The study centres were advertised and organised through community institutions (Community radio and TV in Sydney, and church groups). They operated with culturally sensitive and appropriate pedagogy as student teachers worked as tutors and established positive relationships with students and parents. The opportunity to support parental engagement was further facilitated by enjoying visits with families and participating in community events which provided links to family and community networks.
**Tertiary Awareness Program For South Pacific Island Students (TAPA)**

A key feature of Polynesian Australian education has been the low participation of Pacific Islanders in further and higher education. Typically those Pacific Islanders participating in universities and TAFE are students on scholarship from their country of origin rather than local students who are migrants or the children of migrants.

With the community concern about the lack of participation of its young people in further education the **Tertiary Awareness Program for Pacific Island Students (TAPA)** was introduced in 1996. Since then, programs have been conducted with some 15 schools involving over 225 South Pacific Islander students. The program is jointly developed and managed by the Faculty of Education, the school to which the students belong, pre-service teachers in *Paradise or Problem* and representatives from the communities.

The TAPA program is culturally sensitive and designed to build on the cultural foundations of the Polynesian students. The participation of relevant community role models who discuss their life experiences and their experiences in higher education has been valued by the school students. The inclusion of parent and community members on the visit, the use of vernacular and first language in presentation and discussions, a narrative structure in organizing the program and the use of Polynesian patterns of community support and of greeting rituals to provide a secure and comfortable environment have all helped to create a cultural continuity for the secondary students. For almost all students this is their first contact with a university.

The students visit the university for the day where an orientation to the geography and life of the university is the focus. The intended outcomes are to build the students’ knowledge and awareness of post-school education and inform them of pathways into higher education. Support for the process of decision making and expanding the framework on which choices about staying on at school and further education are an objective.
Students return to school with a renewed enthusiasm to support each other as they negotiate relationships with teachers back at their school. The structural arrangements of the school and classroom however make the process a challenging one. Follow up evaluations reveal that students have scant knowledge of the pathways to further education and the requirements to enter particular employment domains. Students were generally aware of the importance of ‘exam marks, assessment and studying’, as factors that might frustrate their ability to participate in further education.

**Interaction with community**

A key feature of the teaching and learning focus of *Paradise or Problem* has been connecting the student teachers with individual islander students and their families.

The development of the course has been dependent on the support and participation of the islander communities. Community leaders have played a crucial role in course design and implementation both in terms of advice and in opening channels of communication and connection. Subsequently pre-service and in service teachers have had the opportunity to take part in community advisory meetings, manage student conferences, attend community church and cultural meetings and further develop the links between schooling and the community. These experiences have provided opportunities to challenge the cultural assumptions of the teachers as they have established meaningful relationships with the community.

**Overseas Practicum**

Some pre-service teachers have taken the opportunity to teach as interns in South Pacific Schools and live in village communities for extended periods. These pre-service students report that confronted with a new and different cultural context they realise the importance of building relationships with the community (Horsley
and Laws 1992). The student teachers realise that teachers’ knowledge, skills and attitudes are empowered when they as teachers reach out to the students’ culture and community. The beginning teachers learnt to adjust their classroom pedagogy to connect with the culture of their learners.

This research report has outlined some of the innovative practices in the teacher education program at Sydney University. These practices have been in response to the conversations with students of Polynesian background about their experiences of teachers and school. Bishop et al., (2002) has similarly noted that Maori students recognise that the quality of classroom relationships and the use of culturally appropriate pedagogy as vital factors in Maori student engagement at school.

Prestidge (2002, p.6) sums up the qualities that effective teachers will exhibit. The study has similarly identified the following behaviours:

- establish a sound, social, caring, respectful relationship with the students and their families;
- Monitor and check students understand what is expected of them;
- Acknowledge and value their prior learning;
- Provide feedback and feedforward in relation to academic learning and behaviour;
- Construct the learning process, style, content in cooperation with students.

These qualities have been introduced and practiced by the student teachers participating in the course Paradise or Problem.
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CHAPTER 2 Cultural Learning, Cultural Reflection in Teacher Education

PAPER 2

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CHAPTER 2 Cultural Learning, Cultural Reflection in Teacher Education

Cultural Reflection in Teacher Education

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Australian education, in spite of a policy of multiculturalism, is struggling to meet the needs of Polynesian students who represent a growing minority group entering the Australian school system. Australian schools and teachers have found it difficult to respond to the specific cultural orientation and learning needs of Polynesian Australian students. Polynesian young people represent a significant proportion of students exhibiting low achievement, disengagement and alienation.

To address these issues, this paper outlines teacher education innovations at the University of Sydney, Faculty of Education and Social Work, in preparing pre-service teachers for working with Polynesian Australian students and their communities. The paper will outline developments in teacher education curriculum and models of school-community-university partnership, for professional development of teachers working with Polynesian Australian students in Australian classrooms. The paper will also present research on the development of critical cultural reflection in teacher education students within the Master of Teaching at the University of Sydney.

"the classroom is important only as it is understood in its relation to the society and culture of the children who occupy it, and teaching will be effective, only as it is related to society and culture." Redfield 1973

LAYING THE FOUNDATIONS FOR CULTURAL IMAGINATION IN TEACHER EDUCATION

For the last 50 years, Australia has been a country of significant inwards migration. Education systems in each of the Australian states has struggled with an appropriate policy response to the diversity that different cultural groups presented to a school system that had been conceived and organised on a middle-class, Anglo-cultural model of schooling. The emergence of multiculturalism as a positive value that should be encompassed in all the practices of schools requires teachers who are able to step outside their own ethnic orientation, and recognise the way in which cultural understanding imbues the teaching-learning process.
The culture gap has been described by Thaman (2003) as the cultural distance between the culture of the classroom and the home. It refers to the processes of exclusion of the culture and non-school lives of students from what happens in school. Secondary teachers see the schooling process as one of teaching their subject and maximising the academic outcomes of their students. Outcomes are demonstrated through assessment processes that bear no relationship to the cultural context of the young people who are their students.

Teachers’ practices shaped by unquestioning of hegemonic cultural perspectives, will provide explanations for school failure by students from diverse cultural backgrounds in terms of intrinsic deficiencies, of the individual, the cultural group or in terms of the failings of the family from which the student comes. These explanations reflect a deficit view of the contribution of cultural diversity to students’ learning (Connell 1993; Sturman 1997). Such a view is characterised by:

- “Cultural differences are problems rather than resources for learning.
- Pupil performance is the result of the two primary factors of pupil psychology and family socialization.
- Cultural background is largely determinant of school achievement and future socioeconomic standing.”(Floio-Ruane 2001).

Schwarzer’s research (1999) into student teachers’ beliefs about teaching and learning during their in-school practice confirms this deficit model in beginning teachers. What is needed in teacher education are experiences which enable teachers to deconstruct their taken for granted understandings of schools and cultural diversity. Shifting educational practice so teachers are able to work in cooperation and with their school communities, towards social justice, presents a challenge to teacher education.

“Cross-cultural experience should unsettle and transform us. Sometimes the process involves loss, sometimes it yields change; it invariably involves risk and requires engagement”(Floio-Ruane 2001). Teacher educators have attempted to develop curricula and experiences that are aimed at disrupting teachers’ taken for granted cultural assumptions. McIntyre (2002) writes of disrupting the “dyconscious racism” of American teachers through a process of “unlearning whiteness”, “where teacher perspective’s about teaching and multicultural education are challenged to go beyond the economy of the stereotype.” (McIntyre 2002).

This paper reports on a teacher education course that has forged links with communities, schools, community leaders, teacher educators, students and pre-service teachers. The program operates with an awareness of the necessity to create in teachers the skills to exercise a critical “cultural imagination”(Floio-Ruane 2001). The focus has been on creating the links with neighbourhood and community to develop in the student teachers critically reflective practices, to connect Polynesian Australian students with their future teachers. This connection has been forged in a context that values and supports the students’ culture through the development of the cultural imagination of
their future teachers. This course has been offered in the Master of Teaching, a case based post-graduate teacher education course established in 1996 in the Faculty of Education at the University of Sydney (Foster & Horsley 1999; Hunter & Hatton 1998).

The necessity to support pre-service professional learners to explore the cultural hegemony that underlies such views and practices and to understand the consequent alienation and disadvantage that school students experience has been addressed in this teacher education program.

CULTURAL IMAGINATION AND DIMENSIONS IN TEACHING STANDARDS

Currently, in teaching, there is a worldwide standards movement leading to the development of new accountability procedures and standards to assess teacher quality and performance. A national and international mapping of these developing teaching standards reveals a significant role for standards relating to culturally inclusive pedagogy, practices, and understandings. Thus the Newly Qualified Teaching Standards (NQTS) from England specifies that teachers must take into account ethnic and cultural diversity to enrich the curriculum and raise achievement (Standard E). (Ramsey 2000) Many other teaching standards incorporate similar statements. In Australia, a number of emerging teaching standards include specifications for cultural understandings and behaviours. The Standards of Professional Practice for Accomplished Teaching in Australian Classrooms, a current standards framework from the Australian College of Education (Brock 1999) is an Australian benchmark set of standards typical of developments in this area. This framework is currently used to identify outstanding teachers in Australian schools. It suggests that ‘teachers must treat all students honestly, justly and equitably by recognizing and appreciating the range of values held by individuals as well as within families, groups, cultures and the wider school.’ The standards go on to suggest that ‘teachers should be reflective practitioners critiquing the impact of teaching and professional values on students, colleagues and others in the wider learning community.’ As well these standards argue ‘that teachers should take due account of the educational implications of the community’s cultural diversity …by being sensitive and responsive to the educational issues generated by and within the context of continuing to develop a socially cohesive Australian society.’ (Brock 1999)

For teacher educators, it is less clear how to develop or implement curriculum to achieve the necessary knowledge, skills and attitudes necessary to achieve these outcomes and standards. In New Zealand, Maori, Pacific Island and some Pakeha teachers with bicultural experiences are more likely to develop the more holistic approaches, the imparting of knowledge in several subjects at once, the stress on interconnections and learning by exposure and context and the encouragement of cooperative learning and subordination of individual to group achievement that Thaman (1992) describes as ‘the basis of culturally appropriate pedagogy for South Pacific Islanders’.

The sort of cultural literacies, implied by the standards noted above, have been described by Thaman (1988) as requiring understandings that ‘recognise the dynamics of
CHAPTER 2 Cultural Learning, Cultural Reflection in Teacher Education

culture, accommodation of change, create space for differences and most importantly ensures meaningful and successful participation in one’s community’. This view of cultural literacy emphasises the importance of cultural identity in the education process and requires teachers to understand the tensions between the students home culture and school.

In this view education requires the development of awarenesses and practices that legitimise Polynesian identity and culture in the context of Australian society. For pre-service teacher education students, this means coming to see another culture positively, and viewing it from the lens of possibility, as a source of new learning, (in the words of a student teacher ‘this is another whole world that I know nothing about’). As a result of reflection on this new cultural learning, teacher education students begin to adjust their teaching practice to take account of their new cultural knowledge. In this way their teaching is informed by a cultural imagination.

Such imagination or dimension is only derived from serious engagement with another cultural group. Serious engagement requires considerable interaction with the community, in this case provided by visits to homes, churches and community, and long term connections with families and students outside the school. Through activities in homework centres, student forums and discussions in community contexts, work with parents and community groups, pre-service teachers come to learn about other cultures in depth and explore the links between culture, behaviour and learning in its cultural and social context.

The New South Wales Government Review of Teacher Education in New South Wales (Ramsey 2000) found that “more needs to be done to increase the ethnic diversity of the teaching profession. The profession can be best enriched by its composition reflecting as fully as possible that of the society its serves……in some schools people from particular backgrounds should be better represented, where their knowledge and skills would make a significant contribution to improving the quality of the teaching and learning environment, and broadening student aspirations.”

Many teacher education programs have developed a range of rural and overseas practicums (Hill, Thomas & Cote 1996) and internships to provide a method or vehicle to immerse students in another culture and enhance their cultural understandings. It is believed that these experiences allowed pre-service teacher educators to develop enriched teaching and learning insights. However, the characteristics of the teaching force mitigate against easily achieving the outcomes identified for multicultural education by the current standards movement.

The paper will discuss issues in Polynesian Australian education that lead to the development of this unique teacher education curriculum. The paper will then report on research conducted on pre-service students evaluation of their cultural learning from the course and their ability to undertake culturally critical reflection.

Overall the paper will focus on the connections between school, student and community culture and teacher education, and conceptualisations of culturally sensitive pedagogy in teacher education.
POLYNESIAN AUSTRALIAN MIGRATION AND POLYNESIAN AUSTRALIAN YOUTH’S EXPERIENCE OF SCHOOLS

In 2002, only a few teachers of Polynesian cultural background were employed by the Government school system in New South Wales. However, Polynesian Australians of Samoan, Tongan, Cook Island and Fijian heritage were a growing and identifiable cultural group in New South Wales Schools. In certain parts of Sydney this group is the fastest growing minority cultural group. Already in a number of the school districts in the South Western and Western parts of Sydney, Samoan and Tongan are the dominant non-English speaking background languages (NESB). In some school districts secondary schools and their associated feeder schools Tongan enrolments have increased by 62% between 1994 and 2000 and Samoan enrolments have grown by over 97% for the same period. Enrolments in the secondary schools of the Penrith, Blacktown and Mt Druitt school districts have increased representation for students of Tongan, Samoan and Fijian origin. (Carauana 2001)

The fast growth of these communities has been relatively unanticipated. According to Vao (2002) Samoan migration to Australia generally began in a substantial way only within the last 15 years. Although Tongan and Fijian migration began earlier, large scale immigration from these communities has only been a recent phenomena. The majority Tonga, Samoan and Fijian migrants usually arrive after an extended residence in New Zealand. Many are bicultural with extended experience in the New Zealand school system. Anecdotal evidence suggests that newer migrants are increasingly arriving from the homeland under the family reunion categories of the Australian immigration system.

In a study of Samoan immigrants Vao concluded that

- Migrants place great emphasis on maintaining their Samoan way of life (fa’a-Samoan) and assert that Samoan culture is faithfully maintained in Australia.
- Samoans form a tight-knit group with central features of membership ties, extensive gift-giving in the form of remittances to dependants in Samoa and extensive participation in social networks that ritually observe life-cycle events (faʻalavelava).
- In the area of the family, there are conflicts between parents and children over discipline and the degree of parental control over children’s lives.
- Villages and parents fear the loss of control over their children. Many first-generation migrants feel that some of their values and relationships have been turned upside down.

Quantitative and qualitative data on school performances and participation indicates areas of concern for Polynesian Australian students. These groups are over represented in suspensions, expulsions and discontinuance compared to other identifiable cultural groups (Hutakau 1999). Polynesian Australian students tend to make up a considerable
proportion of students scoring in the bottom decile in the Higher School Certificate and quintile in the School Certificate and in the basic skills tests and English Literacy and Language Assessment tests that report on the performance of students in New South Wales Schools. Furthermore these indicators of failure and under achievement are highly visible for both students, parents and communities.

One aspect of Polynesian Australian education causing particular concern is the low retention (staying on) rate of these groups in senior high school and higher education (Lowe et al. 1997). Research undertaken on Cook Island students retention concluded (Lowe et al. 1997) that many Cook Island students linked their feelings about specific subjects to the attitude of the teacher. The research identified three categories of schooling difficulties mentioned by including methods of teaching, literacy and racism. Students offered suggestions for overcoming the difficulties and most of their suggestions included improving the communication channels between students and teachers such as ‘Teachers should relax.’ ‘Seniors need more freedom.’ ‘Teachers should talk to us more.’ ‘We need more direction.’ Not surprisingly, the research showed that teachers had little knowledge of the student home culture and most could not actively distinguished between Cook Island students and Pacific Island students in general. There was a general culture of seeing Pacific Island students as a group, unless there had been some necessity to seek out a particular student’s background.’ Teachers felt that Pacific Islanders generally were low-achievers in the school, “Islander kids seem to experience the problems of being late, lack of attendance and truancy. They often do not have the equipment and are not prepared for class. Islanders may lose their belongings, textbooks, bags. Because of their cultural influence and communal lifestyle everything is shared”.

Research on Maori students in New Zealand (Bishop et al. 2002) has similarly noted that Maori students recognise that the quality of classroom relationships and the use of culturally appropriate pedagogy as vital factors in Maori student engagement at school. Prestidge (2002, p.6) sums up the qualities that effective teachers will exhibit. Bishop (2002) has similarly identified the following teacher behaviours:

- establish a sound, social, caring, respectful relationship with the students and their families;
- Monitor and check students understand what is expected of them;
- Acknowledge and value their prior learning;
- Provide feedback and feedforward in relation to academic learning and behaviour;
- Construct the learning process, style, content in cooperation with students.

These qualities have been introduced and practiced by the student teachers participating in the course Paradise or Problem.
PARADISE OR PROBLEM: TEACHER EDUCATION AT THE UNIVERSITY OF SYDNEY

In response to the growing understandings of the needs of Polynesian Australians, the Faculty of Education at Sydney University began to develop specific programs in teacher education to prepare new teachers to work with Polynesian Australians. The phenomena of an increasing body of disengaged young people participating in an education system in which teachers had little knowledge and valuing of the cultural context of these students presented a challenge to the developers of the new Master of Teaching course at the University of Sydney.

Since 1996, sixteen courses have been mounted and some 250 pre-service teachers have participated and developed skills to assist the growing number of Polynesian Australian students in the NSW education system. The Paradise or Problem course has been developed to provide pre-service students with

- The opportunity to focus on the cultures of Pacific Island students
- Intercultural understanding and practice through interaction with students and their families in the context of home and community
- Active input from leaders in the islander community
- The opportunity to work with Islander students in non-school contexts by providing educational support in an after school studies centre
- Practicum experiences in schools with large islander populations
- The opportunity for internships in country of origin of some of the islander groups

A key feature of the teaching and learning focus of the course has been connecting with individual islander students and their families, and providing opportunities to make links with those whose cultural experiences are very different from those of the pre-service beginning teachers. The development of the course has been dependent on the participation of the islander communities. Community leaders have played a crucial role in course design and implementation both in terms of advice and in opening channels of communication and connection. Subsequently pre-service and in service teachers have had the opportunity to take part in community advisory meetings, manage student conferences, attend community church and cultural meetings and further develop the links between schooling and the community.

This pre-service model has also been extended to in-service professional development for teachers working in schools with significant numbers of Polynesian Australian students. The need to understand the communities and to respond appropriately has been the motivation for these teachers.

The Paradise or Problem course has featured a number of interlocking and inter-related components
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- Cultural and education learnings at university, through lectures and seminars,
- Provision of a South Pacific Island Homework and Study Centre for Polynesian Australian students and their parents, managed and operated by pre-service teachers,
- A Tertiary Awareness Program for Polynesian Australians managed by pre-service students
- Interaction with the community through access to community events and meetings
- The opportunity to undertake practicum in schools with Polynesian Australian students and the opportunity to undertake teaching internships in Polynesian nations

RESEARCH ON THE CRITICAL CULTURAL REFLECTION OF PRE-SERVICE TEACHERS UNDERTAKING THE PROGRAM

Developing critically reflective practitioners is one of the main aims of teacher education programs. Reflective practitioners develop skills in critiquing their pedagogy during and after their teaching (Smith & Hatton 1995) and evaluating their teaching practices with a view to improvement. Furthermore ‘to engage in critical reflection requires a moving beyond the acquisition of new knowledge and understanding, into questioning [of] existing assumptions, values, and perspectives’ (Cranton 1996). Becoming culturally critically reflective is an exercise in critical reflection where cultural assumptions, values and perspectives are critiqued, compared and evaluated.

Developing cultural critical reflection requires a number of reflective elements and processes that are held to be central to critical reflection (Imel 1998). These include

- being aware of the cultural contexts of schooling and learning,
- critiquing teaching and learning situations from diverse cultural reference points,
- analysing the cultural assumptions held in given teaching situations,
- reviewing one’s own cultural assumptions by being questioning and skeptical
- speculating on more culturally appropriate and sensitive teaching and learning behaviours (Brookfield 1988).

Although it is widely understood that existing school and organisation structure inhibit reflection, the capacity for teachers to change, improve their teaching and develop new teaching roles is dependent on critical and reflective examination of teaching practices. Cultural critical reflection requires teachers to look beyond their learned individual, institutional, educational and social practices and to interrogate them from the perspectives of other cultures. Some researchers have termed this process ‘unlearning or
unmaking whiteness (McIntyre 2002), where teachers’ perspectives about teaching and multicultural education are challenged to go beyond the ‘economy of the stereotype’ (McIntyre, 2002).

By the end of the teacher education course pre-service teachers had:

- tutored and coached in the home study centres where they the opportunity to interact with the children’s parents,
- participated in community events and interacted widely with community members
- conducted tertiary awareness days for Polynesian Australian students and community members at the University
- been exposed to Polynesian community leaders and speakers during seminars at the University

At the conclusion of the course students were asked to briefly evaluate the course, and reflect on their learning. A small pilot sample of these evaluations and reflections were analysed to identify the type of reflection that pre-service teachers undertaking the course had made.

Researchers at the University of Sydney value critical reflection highly and have developed ways of researching its development (Smith & Hatton 1995). Harris, Smith, Merritt, Simons and Reid (2002) developed ways of analysing students’ reflective writing to assess whether students reflective writing was simply descriptive or truly critical. This method of analysing reflective writing has been adapted for describing and analysing culturally reflective pre-service student writing to establish how much cultural reflection has been critical cultural reflection.

Culturally reflective writing can be conceptualised as representing varying strengths and depths of cultural awareness and questionings, cultural analysis of teaching and learning situations and varying levels of understandings of the implications of the implications of culture for pedagogy and teaching behaviour. Reflection can be descriptive in the sense that it reports experiences or dialogic to the extent that it involves a conversation and discourse about experiences. Educators have long been concerned about critical reflection - where questioning the assumptions and structure of situations leads to new visions and views, which provide both the basis and motivation for changed behaviour.

Culturally descriptive reflection described writing that referred to pre-service students learning of new cultural practices, ideas, terms and people that they experienced in the course. In particular culturally reflective writing included Polynesian language and expressions that describe important aspects of Polynesian cultural practices and beliefs, and descriptions of the Polynesian students and community that they met during the course. Such culturally descriptive writing showed pre-service teachers growing awareness of culture and its role in learning. Such culturally descriptive reflection provides the starting point for analysing the cultural assumptions in teaching and learning situations.
Culturally dialogic reflection described writing that involved the pre-service students in analytic conversations with themselves and their culture, and their cultural practices. In particular, culturally dialogic reflective writing discussed how cultural practices conflict in school settings and the meaning of this for Polynesian Australian students and Australian teachers of Polynesian Australian students. Culturally dialogic reflective writing explored the underlying cultural origin of particular teaching and learning situations and tried to explain their cultural basis.

Culturally critical reflection described writing in which the pre-service teachers examined their own teaching behaviour in the context of the wider social, political and cultural context of Polynesian Australians. In particular, culturally critical reflective writing focused on speculation about appropriate teacher behaviour and pedagogy in the context of reviewing cultural assumptions. Such writing evidenced pre-service teachers theorizing about the best ways to plan, program and organize teaching and learning on the basis of reflecting about new cultural learning they had made.

PRE-SERVICE STUDENTS CULTURAL REFLECTION

The preliminary results of the pilot study revealed that most of the pre-service teachers’ reflection was culturally descriptive reflection. Almost 70% of all the reflective writing was of this type. The pre-service teachers reflective writing constantly referred to the cultural items, practices and people they encountered in the course. For two of the respondents this was the only type of reflection undertaken. All the respondents reflective writing included references to vernacular terms such as Fa’afo’i mo fou a’oa’a’oga, tofa sofia, fa’a samo’a, which are essential in developing cultural awareness of Polynesian Australians. Culturally descriptive reflection examples of writing included,

The interview with Tongan parents have given me some understanding about Tongan culture both in Tonga and how it has changed in Australia. The parents were very warm and friendly. The reasons that most Tongans came to Australia are to look for jobs and to give their children a better education and life. (3)

I found the talks given by the Tongan lady and the Samoan guy very useful as an insight into understanding Tongan and Samoan life both here in Australia and back home in the village. (2)

Approximately 20% of the reflective writing could be identified as culturally dialogic where the reflective writing attempted to explain educational phenomena from a cultural perspective. This culturally dialogic type of reflective writing shows that the writers are engaged in a dialogue with culture and they develop new ways of explaining events and seeing pedagogic situations. Although usually dialogue implies the use of the personal pronoun (I) cultural dialogue involves reflection which explores the cultural by comparison and attribution that is new. Often the dialogue has an intertextual aspects as the writer seeks new attributions that are referenced in another cultural view. Culturally dialogic reflective examples of writing included
The information I collected about Western Samoa not only provided me with a sound background of what the climate, crops, wealth, politics and village life included, but it also highlighted the hierarchical structure of Samoan villages - who serves who. I hope to use the knowledge gained from my reading as a reference point for story telling and a way to explain ideas clearer either for the parents or the children. (3)

Some of these issues concern the way Tongan children relate to figures in our society. Their status or authority may greatly differ from, oppose and abrade the attitudes expected toward those figures in a Tongan home and community hierarchy. Their expected behaviour in school versus the behaviour expected at home, poses a dual demeanor that inevitably would be confusing and frustrating. The two cultural deliberations on the importance of education, its expectations and priority must further cause anguish for the student. Parents may feel a loss of control and helplessness, reacting profoundly to their child's resistant behaviour. Meanwhile, the school or teachers may have no idea or little intention of constructively tackling these problems. (5)

Only 10% of reflective writing could be classed as culturally critical where the pre-service teachers synthesized their new cultural information and used it to speculate on how they could improve their teaching by more appropriate and culturally sensitive pedagogy. This writing locates behaviour in a cultural frame. Another aspect of culturally critical reflective writing is its affirmation. Such writing not only values another culture it also is frames it in the context of empowerment both for the teacher, and their speculative and planned action but also for the target student group. Culturally critical reflective writing examples included

I feel it would be useful to talk at length with parents about their role in supporting their children in further education (or possible careers) enabling them to feel a sense of real collaboration and guidance concerning their children's' lives at school and beyond. I think the students would appreciate some advice and discussion on what they could achieve and pursue...we as a group, could endeavour to provide some assistance and support to the parents and students in determining and acting upon any ideas they have for education, training and employment in the future, it may strengthen all of our positions. (5)

Some of the course participants had also taken the opportunity to undertake an extended internship of 10 weeks in the South Pacific Island schools. Since 1996, 25 teacher education students have completed internships in Fiji, Samoa, Tonga and the Cook Islands. Initial evaluation of their internship reports (completed after the completion of the internship as a reflection on the internship process) indicates that living in South Pacific communities and teaching in South Pacific schools for extended periods accelerates the development of culturally reflective writing. Such internship reports features considerable proportions of culturally dialogic reflective writing.
CHAPTER 2 Cultural Learning, Cultural Reflection in Teacher Education

CONCLUSION

The philosopher Kierkegaard suggested that “All deep thought begins and ends in the attempt to grasp whatever touches one most immediately.” Deep and serious engagement in another culture and it’s practitioners is necessary for the development of the cultural imagination, an imagination that is necessary if teachers are to take up the challenges of multicultural education. Serious engagement in other cultures allows pre-service teachers to question their own cultural and educational assumptions. Engagement with communities in non-school educational contexts allows pre-service teachers to develop new cultural lenses that are likely to lead them to affirm other cultures and see the possibilities they afford.

It is well known that critical reflection helps shape a shared discourse in the community of teachers, a discourse that ultimately values and undertakes discussion of teaching strategies and evaluates current teaching practice. Critical reflection is the holy grail of teacher education. To develop teachers that critically reflect on their pedagogy implies teachers who can evaluate and improve their teaching, who put their students at the centre of evidence collected about teaching and learning. This paper has developed the concept of cultural reflection. Critical cultural reflection is necessary to review the cultural assumptions in pedagogy. Culturally critical reflection provides the motivation to adopt pedagogical practices that affirm student identity and culture and overcomes the economy of stereotype.

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CHAPTER 2 Cultural Learning, Cultural Reflection in Teacher Education


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Teacher Cultural Reflection and Cultural Action Learning: Researching a Cultural Dimension in Teacher Education

(You can lead a horse to water but you can’t make it drink!)

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ABSTRACT

Initially this paper describes the range of ways that teacher educators have developed to introduce a cultural dimension into teacher education programs. These include curriculum and cultural infusion models, where teacher educators develop courses for student teachers to enable them to better support the learning of culturally diverse student groups. Teacher educators have also developed cultural engagement models of teacher education, requiring student teacher experiences in diverse communities, and cultural immersion models requiring extensive life and/or teaching experiences in other cultures. Teacher educators have also developed two-way inquiry learning and bicultural models of incorporating cultural dimensions into teacher education. Examples of these types of cultural programs for Australian beginning teachers of Pacific Island school students are explicated in the paper.

The paper then reports on continuing research, undertaken at the University of Sydney, which compares how such different modes of cultural dimensions in teacher education influence the critical reflection of pre-service and beginning teachers. In particular the research will compare student teacher reflection in cultural engagement modes and cultural immersion modes of teacher education programs. The research shows that living and teaching in a new culture promotes certain types of reflection on teaching, learning and culture. However, many new teachers are still unable to undertake critical cultural reflection.
Teacher Cultural Reflection and Cultural Action Learning: Researching a Cultural Dimension in Teacher Education

ABSTRACT

This paper describes the range of ways teacher educators have developed to introduce a cultural dimension into teacher education programs. These include curriculum and cultural infusion models, where teacher educators develop courses for student teachers to enable them to better support the learning of culturally diverse student groups. Teacher educators have also developed cultural engagement models of teacher education, requiring student teacher experiences in diverse communities, and cultural immersion models requiring extensive life and/or teaching experiences in other cultures. Teacher educators have also developed two-way inquiry learning and bicultural models of incorporating cultural dimensions into teacher education. Examples of these types of cultural programs for Australian beginning teachers of Pacific Island school students are explicated in the paper.

The paper then reports on continuing research which compares how such different modes of cultural dimensions in teacher education influence the critical reflection of pre-service and beginning teachers. In particular the research will compare student teacher reflection in cultural engagement modes and cultural immersion modes of teacher education programs. The research shows that living and teaching in a new culture promotes certain types of reflection on teaching, learning and culture.
A Survey of International Trends in the Development of a Cultural Dimension in Teacher Education

It is accepted that western educational systems have usually not responded well to the needs of culturally and linguistically diverse populations. Accordingly, there is an increasing concern that teacher education must prepare new teachers to more successfully teach an increasingly culturally and linguistically diverse student population (Rudney, Marxen, & Riska, 1999).

In the United States, the National Council for Accreditation of Teacher Education (NCATE), in their 1994 Refined Standards, maintained that pre-service teachers must be ‘able to create learning experiences shaped around all students’ prior knowledge, exceptionalities, and cultural backgrounds.’ NCATE suggests that teacher education lesson content must be ‘global and multicultural in perspective while field experiences should provide opportunities for analysis and practice in various communities with culturally diverse and exceptional populations’. Recently developed teaching standards in many western countries (Ramsey 2000) increasingly incorporate domains and elements referring to teacher knowledge, skills and attitudes in relation to managing teaching and learning for students from diverse cultural backgrounds.

For some researchers, teachers’ beliefs, attitudes, expectations, and biases have been cited as major factors in the failure of the educational system to respond to the needs of students of culturally diverse background (Bishop et al 2001). As a result, there is an increasing demand for teacher education to develop programs in this area. It is felt that teacher educators especially must “provide opportunities for pre-service teachers to construct the knowledge, attitudes, and skill necessary to initiate and facilitate classroom dialogue regarding inclusive education and exceptionality” (Howard & Denning del Rosario, 2000). In addition it is argued strongly that “…only through ongoing reflection, inquiry, and examination of their changing patterns of thought and practice will new pedagogical practices begin in teachers’ work”.

According to the Holmes Group (1990), teachers must become culturally responsive, “to understand and respect differences across socioeconomic status, languages and dialects”. Teacher education programs have a critical role to play in offering courses and other experiences that focus on issues and questions about equity and diversity. It is believed that what pre-service teacher education students learn in their preparation programs can have an enormous impact on their attitudes and practices they bring with them to the schools and classrooms where they will work.
A range of strategies that schools of education might use to address issues of student diversity in teaching has been identified. These strategies included cultural infusion strategies, where pre-service teachers were exposed to aspects of diversity in aspects of their general teaching and learning program, and specialised courses dealing with teaching in diverse classrooms. A number of researchers have been critical of such strategies and described such ways of preparing teacher education students for the diverse classroom as “window dressing”. McIntyre (2002) describes one of these strategies as an:

examination of whiteness with predominantly white students in teacher preparation programs by the use of group collages—a pedagogical tool that combines visual, textual, and oral representations of subject matter. In doing so, I illustrate one of the ways teacher educators can provide students with opportunities to (1) “see” whiteness as an integral aspect of educational discourse, (2) fix their gaze on themselves as a collective racial group, and (3) engage in processes aimed at changing beliefs, stereotypes, and practices that reproduce social and educational injustice. (McIntyre 2002)

Of course, such strategies require no real interaction, engagement and/or immersion in other cultures.

Still another strategy could be described as cultural engagement, where pre-service teachers are provided with experiences in the culture of the diverse student group in the community context of the school. There are many ways to structure this engagement, either through student teacher volunteer work in the community, after school tutoring, or community service learning. One variation of cultural engagement is deep engagement in the target cultural community. As the term implies, deep engagement would imply a range of experiences in the community over a significant time period.

Some teacher education courses have developed strategies which attempt to provide opportunities for prospective teachers to develop meaningful relationships with people from other cultures. Some of these strategies could be described as cultural immersion. In cultural immersion student teachers have the opportunity to interact with students from cultures different from themselves by immersion into another culture. Often immersion requires an extended period of field experience in another culture – often in the target culture of the majority of the diverse student body. Sometimes such
immersion also includes teaching experiences in the country of the target culture, and incorporates practical field experiences as teaching immersion or cultural internship.

Herdoiza-Estevez & Murray (2003) describe a cultural immersion strategy at Indiana University Southeast “as a field experience that takes place in a culture and country different from the candidates’ own…. an overseas experience that would broaden a student teacher’s cultural awareness and prepare them to meet the educational needs of diverse students”. The goals and outcomes of such immersion strategies have been described as

1. Learn about the education system, the people and the culture;
2. Compare and contrast the education systems;
3. Collaborate with colleagues in international and multicultural communities;
4. Effectively employ cross-cultural communications;
5. Enhance awareness of international perspectives about the link between educational and social processes;
6. Creatively apply effective pedagogical principles in the planning, teaching, management, and evaluation of the learning process;
7. Reflect critically on personal adaptation and growth in new learning environments;
8. Engage in positive adaptation to a foreign educational and cultural environment; and
9. Identify and reflect on aspects of the Hispanic culture that need to be considered when educating.

(Herdoiza-Estevez & Murray 2003)

According to Herdoiza-Estevez and Murray, as a result of such immersion it is hypothesised that student teachers will be better prepared to meet the learning needs of students in the area of cultural diversity. It is supposed that they will become more able to:

- understand the nature and content of culture
• design and implement culturally-appropriate teaching and learning strategies

• bridge the gaps between home and school

• provide more culturally responsive instruction through modified classroom interactions, curriculum, instructional strategies, and teaching resources.

Many teacher education institutions report that they are developing and expanding their cultural immersion strategies in teacher education, especially as a way of responding to both the Federal Government demands (No Child Left Behind 2001) to upgrade teacher education, and to meet the increasing demands student teachers and new teachers face in the culturally diverse classrooms they are training and teaching in.

In the South Pacific, the cultural educational research in Tonga of Thaman (2003) has shown that indigenous educational ideas (in Tongan ako, ilo, poto – learning, knowledge and wisdom) and language, remain at the core of the culture and learning of Tongans. Traditional epistemology and educational ideas shape and construct Tongan identity, culture and being. Western curriculum and education systems which neglect traditional Tongan values, relationships, social practices and understandings ignore the entire purpose (or end) of education and are likely to fail Tongan children. This movement has seen a resurgence in the study of traditional educational ideas of Fijians (Nabobo cited in Thaman 2003, Bakalevu cited in Thaman, 2003), Cook Islanders (Mokoroa cited in Thaman, 2003), and Samoans (Buatava cited in Thaman, 2003). South Pacific teacher education students (in the South Pacific region) are increasingly likely to study this research and incorporate its insights into their teaching and learning planning. The implications of indigenous education ideas for teacher education has been further spelt out by Taufe’uulungaki (cited in Thaman, 2003):

*Teachers must capitalise on the wealth of experience, knowledge and skills the children bring with them from their home cultures to the learning process, and deliberately use those values, beliefs, world views, knowledge, speech rules and learning systems to organise their classrooms, communicate with and teach their students.*

*As a result Taufe’uulungaki (cited in Thaman 2003) describes how such South Pacific Island indigenous educational knowledge has been incorporated formally into the curriculum of teacher education in Tonga and other South Pacific countries.*
In New Zealand, Vaioleti (2001) describes two theoretical approaches to the difficulties experienced in Maori education:

There are two major perspectives within the culturalist paradigm – cultural deficit (Bishop, 1997) and cultural discontinuity (Fusitu’a and Coxon, 1998). Cultural deficit theory is an often used theory to blame indigenous students (Polynesians in this case) (Bishop & Glynn, 1999; Fusitu’a and Coxon, 1998; Scheurich, & Young, 1997) for failing culturally biased education ... the cultural discontinuity perspective focuses on the school to explain the minority group under-achievement ..... it assumes that the school culture and minority group cultures are in conflict (Helu-Thaman, 1997, 1999, 1999b); that because school functions to benefit the already privileged, this is what determines all aspects of schools because they exist for the transmission of the dominant group’s culture.

The implications for teacher education have been to validate, value and incorporate elements of Maori culture and worldviews in the curriculum of teacher education, and to develop elements of bi-culturalism in pre-service teachers. The research of Bishop et al., (2002) has stressed that Maori students recognise that the quality of classroom relationships and the use of culturally appropriate pedagogy are vital factors in Maori student engagement in school. Accordingly teacher education courses are urged to incorporate what Prestidge (2002, 6) claims are the qualities that effective teachers of Maori will exhibit.

- Establishment of a sound, social, caring, respectful relationship with the students and their families;
- Monitoring and checking students’ understanding what is expected of them;
- Acknowledgment and valuing of their prior learning;
- Provision of feedback and feedforward in relation to academic learning and behaviour;
- Construction of the learning process, style, and content in cooperation with students and their culture.
In teacher education for preparing to teach Australian Aborigines, the *two-way enquiry learning* adopted for Aboriginal schooling has also come to influence teacher education. Originally in the *two-way* model proposed by Stephen Harris, it was suggested that the two cultural domains of aboriginal and western culture should be taught separately in schools without reference to each other. In *both-ways* extension of this model recognises the differences in the cultures, and there is considerable effort made by the school and the teachers to build bridges between them. In teacher education these concepts have been extended to incorporate *two-way inquiry or learning*. Hooley (2002) describes two-way learning as major theoretical construct:

*A set of dimensions for ‘two-way enquiry learning’ has been developed for continuing investigation and refinement within the University and schools. It attempts to outline the conditions for high quality, non-assimilationist and culturally-inclusive learning appropriate for all children. This is a long-term research project involving cycles of practice and theorising. The project is epistemological as the basis and motive forces of Indigenous and non-Indigenous practice and knowing enfold, create and transform.*

The two-way enquiry learning concept provides guidance on the practical issues of curriculum design and classroom teaching. The notion of ‘Koori perspective across the curriculum’ begins to identify the characteristics of a general approach to Indigenous education that can be used to framework all subjects and includes parameters such as morality, religion, philosophy, learning.” (Hooley 2002)

In teacher education learning experiences such as meeting and discussing education with Aboriginal people and field experiences in schools with Aboriginal students are constructed around the discourse of two-way learning. Often such experiences are designed as action learning experiences, where pre-service teachers are encouraged to reflect both on the original and new learning’s they have gained through contact, work and experience with Aboriginal people. In this way:

...”rather than confining Indigenous education to one specific subject area, a perspective can be applied across all areas and ensure that key principles are included……a democratic classroom is concerned with learning that is ‘interesting, intellectual, awe-inspiring, engaging, communal, thoughtful, critical, welcoming, fascinating, caring, factors that connect nicely with enquiry and perspective. (Hooley 2002)
Examples of Engagement, Immersion and Two-Way Learning Teacher Education Models

Cultural Engagement Models

Since 1995 the Faculty of Education at Sydney University has begun to develop specific programs in teacher education to prepare new teachers to work with Polynesian Australians and Aboriginal Australians (in 2001). The phenomena of an increasing body of disengaged young people participating in an education system in which teachers had little knowledge and valuing of the cultural context of these students, presented a challenge to the developers of the new Master of Teaching course at the University of Sydney.

Since 1996, sixteen courses have been mounted and some 250 pre-service teachers have participated and developed skills to work with the growing number of Polynesian Australian students in the NSW education system. Using a cultural engagement model, a course termed Paradise or Problem was developed to provide pre-service students with the opportunity to focus on the cultures of Polynesian background students. The development of intercultural understanding and practice through interaction, and building relationships with students and their families, has been the central focus of the course. Student teachers have been required to engage and to establish positive relationships with students and their parents in the context of home and broader community. Active input from leaders in the Pacific Islander community has assisted the process of cultural engagement with the community. The cultural engagement course has featured a number of interlocking and inter-related components:

- Cultural and education learning at university, through lectures and seminars;
- After School Study Centre, a facility for Polynesian Australian students and their parents, managed and operated by pre-service teachers designed to support homework and home study;
- A Tertiary Awareness Program for Polynesian Australians managed by pre-service students (TAPA) in cooperation with community leaders;
- Interaction with the community through access to community events and meetings;
- The opportunity to undertake practicum in schools with Polynesian Australian students and the opportunity to undertake teaching internships in Polynesian nations.
The opportunity for student teachers to work with students in non-school contexts was initially achieved through providing educational support at an after school Studies Centre. Practicum experiences in schools with large islander populations provided student teachers with the opportunity to take their newfound experiences into the school context. Some student teachers participation in internships in Samoa enabled these students to build extensive relationships with the community.

This pre-service cultural engagement model has also been extended to in-service professional development for teachers working in schools with significant numbers of Polynesian Australian students. The acknowledgment of the difficulties that the teachers experience in their work with students of Polynesian background provided the motivation to participate in the professional development. The course, with its emphasis on building positive relationships, helps develop understandings that locate the disadvantage not in the student but in the structures and culture of the school system.

A key feature of the teaching and learning focus of *Paradise or Problem* has been connecting the student teachers with individual islander students and their families. The development of the course has been dependent on the support and participation of the islander communities. Community leaders have played a crucial role in course design and implementation, both in terms of advice and in opening channels of communication and connection. Subsequently pre-service and in-service teachers have had the opportunity to take part in community advisory meetings, manage student conferences, attend community church and cultural meetings and further develop the links between schooling and the community. These experiences have provided opportunities to challenge the cultural assumptions of the teachers, as they have established meaningful relationships with the community.

By the end of the teacher education course pre-service teachers had

- tutored and coached in the home study centres where they had the opportunity to interact with the children’s parents;
- participated in community events and interacted widely with community members;
- conducted tertiary awareness days for Polynesian Australian students and community members at the University;
been exposed to Polynesian community leaders and speakers during seminars at the University.

At the conclusion of the course students were asked to briefly evaluate the course, and reflect on their learning. A sample of these evaluations and reflections were analysed to identify the type of reflection that pre-service teachers undertaking the course had made.

**Cultural Internship and Immersion Models**

In addition to the course based on the *cultural engagement model*, some pre-service teachers have taken the opportunity to undertake *cultural internships and immersion* in South Pacific Schools and teach and live in village communities for extended periods. In 1999, 13 undertook teaching internships in the schools of Samoa for a ten-week internship. At this stage they were qualified beginning teachers who chose to commence their teaching careers with an unpaid internship in the South Pacific. In 2000 another intern also agreed to undertake internship in Samoa and a further two new cultural interns taught and lived in Samoa in 2003. To assist these student teachers in their teaching and cultural reflection, they were mandated to complete an action learning case study internship report. In this task they were to note and explore their own learning in the new teaching and learning situations, and be reflective. In addition they were asked to include in their reflection advice for teachers of Polynesian Australians back in Australia. It was hypothesised that this task would assist the cultural interns in structuring their observations and reflections.

**Two-Way Inquiry Learning**

In 2002, 14 Master of Teaching (MTeach) candidates completed a 10-week internship in the Northern Territory. After application and interview by officers of the Northern Territory Department of Education Employment and Training (NTDEET) they were placed in remote indigenous (Aboriginal) schools. To meet requirements for their placement, each intern was required to submit a report on an action learning or action research project which they undertook during their internship. After discussion with officers of the department, it was decided that in this instance all students would complete a report in response to the question ‘*How do I learn to become an effective teacher in a remote Indigenous community?*’ In each case, the response was a personal reflection on their own practice and the factors which encouraged or impeded their understanding and growth as beginning teachers of Aboriginal students, in all the diverse
cultural and linguistic contexts they were teaching and living in. Interviews for students in 2004 are proceeding at present as the programme continues to gain support from both NTDEET and Master of Teaching students at the University of Sydney.

**Research on the Critical Cultural Reflection from Deep Engagement**

Developing critically reflective practitioners is one of the main aims of teacher education programs. Reflective practitioners develop skills in critiquing their pedagogy during and after their teaching (Hatton & Smith 1995) and evaluating their teaching practices with a view to improvement. Furthermore ‘to engage in critical reflection requires a moving beyond the acquisition of new knowledge and understanding, into questioning [of] existing assumptions, values, and perspectives’ (Cranton 1996). Becoming culturally critically reflective is an exercise in critical reflection where cultural assumptions, values and perspectives are critiqued, compared and evaluated.

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*Culturally descriptive reflection* described writing that referred to pre-service students’ learning of new cultural practices, ideas, terms, and people that they experienced in the course. In particular culturally descriptive writing included Polynesian language, and expressions that describe important aspects of Polynesian cultural practices and beliefs, and descriptions of the Polynesian students and community they met during the course. Such culturally descriptive writing showed pre-service teachers’ growing awareness of culture and its role in learning. Such culturally descriptive reflection provides the starting point for analysing the cultural assumptions in teaching and learning situations.

*Culturally dialogic reflection* described writing that involved the pre-service students in analytic conversations with themselves and their culture, and their cultural practices. In particular, culturally dialogic reflective writing discussed how cultural practices conflict in school settings, and the meaning of this for Polynesian Australian students and Australian teachers of Polynesian Australian students. Culturally dialogic reflective writing explored the underlying cultural origin of particular teaching and learning situations, and tried to explain their cultural basis.
**Culturally critical reflection** described writing in which the pre-service teachers examined their own teaching behaviour in the context of the wider social, political and cultural context of Polynesian Australians. In particular, culturally critical reflective writing focused on speculation about appropriate teacher behaviour and pedagogy in the context of reviewing cultural assumptions. Such writing evidenced pre-service teachers theorizing about the best ways to plan, program and organize teaching and learning on the basis of their reflections on new cultural learning.

**Comparing Cultural Reflection for Engagement, Cultural Immersion and Two Way Learning Pre-service Students**

**Cultural Engagement and Critical Reflection**

Horsley & Bagnall’s (2003) analysis of the cultural engagement mode pre-service teachers’ reflection was predominantly culturally descriptive reflection. It was noted that almost 70% of all the reflective writing were of this type. The engagement mode pre-service teachers’ reflective writing constantly referred to the cultural items, practices and people they encountered in the course. For 70% of the respondents this was the only type of reflection undertaken. All the respondents’ reflective writing included references to vernacular terms such as *Fa’afetai mo fou a’oa’oga, tofa soifua, fa’a samoa*, which are essential in developing cultural awareness of Polynesian Australians. Culturally descriptive reflection examples of writing included,

- The interview with Tongan parents have given me some understanding about Tongan culture both in Tonga and how it has changed in Australia. The parents were very warm and friendly. The reasons that most Tongans came to Australia are to look for jobs and to give their children a better education and life (3)

- Our discussions about education in the Pacific were great, such as parents’ aspirations for their kids in relation to the curriculum offered, etc. (1)

- *I found the talks given by the Tongan lady and the Samoan guy very useful as an insight into understanding Tongan and Samoan life both here in Australia and back home in the village. (2)*
Approximately 20% of the reflective writing could be identified as culturally dialogic where the reflective writing attempted to explain educational phenomena from a cultural perspective. This culturally dialogic type of reflective writing shows that the writers are engaged in a dialogue with culture, and they develop new ways of explaining events and seeing pedagogic situations. Although usually dialogue implies the use of the personal pronoun (I) cultural dialogue involves reflection which explores the cultural by comparison and attribution that is new. Often the dialogue has intertextual aspects, as the writer seeks new attributions that are referenced in another cultural view. Culturally dialogic reflective examples of writing included

Many of the Tongan students have problems at school. Their parents cannot help with school work because they have little education. Some of the students have problems with their teachers, hence they have been neglected and are disadvantaged. Many of them have chosen low subjects and do not wish to study further in tertiary institutions. (1)

The information I collected about Western Samoa not only provided me with a sound background of what the climate, crops, wealth, politics and village life included, but it also highlighted the hierarchical structure of Samoan villages - who serves who. I hope to use the knowledge gained from my reading as a reference point for story telling and a way to explain ideas clearer either for the parents or the children. (3)

Some of these problem issues concern the way Tongan children relate to figures in our society. Their status or authority may greatly differ from, oppose and abrade the attitudes expected toward those figures in a Tongan home and community hierarchy. Their expected behaviour in school versus the behaviour expected at home, poses a dual demeanor that inevitably would be confusing and frustrating. The two cultural deliberations on the importance of education, its expectations and priority must further cause anguish for the student. Parents may feel a loss of control and helplessness, reacting profoundly to their child’s resistant behaviour. Meanwhile, the school or teachers may have no idea or little intention of constructively tackling these problems (5)
Only 10% of reflective writing of the engagement model students could be classed as culturally critical, where the pre-service teachers synthesized their new cultural information and used it to speculate on how they could improve their teaching by more appropriate and culturally sensitive pedagogy. This culturally critical writing locates behaviour in a cultural frame. Another aspect of culturally critical reflective writing is its affirmation of culture. Such writing not only values another culture, it also frames it in the context of empowerment; both for the teacher, and their speculative and planned action, but also for the target student group. Culturally critical reflective writing examples included:

*My role as teacher would be to advocate for the Pacific Islander children and families in the school environment, and to utilise what they know at home and from the village and to incorporate it at school as valuable knowledge. To encourage them to talk about and write about their own cultural experience. As an art teacher, to encourage their own traditional styles as well as developing an understanding of other styles. When teaching, to understand the idea of shame as a result of discipline as opposed to guilt, and to be aware of this when teaching* (2)

*I feel it would be useful to talk at length with parents about their role in supporting their children in further education (or possible careers) enabling them to feel a sense of real collaboration and guidance concerning their children’s lives at school and beyond. I think the students would appreciate some advice and discussion on what they could achieve and pursue...we as a group, could endeavour to provide some assistance and support to the parents and students in determining and acting upon any ideas they have for education, training and employment in the future, it may strengthen all of our positions.* (5)

Cultural Internship and Immersion and Critical Reflection

As discussed before, some of the cultural engagement course participants had also taken the opportunity to undertake an extended cultural and teaching internship of 10 weeks in the South Pacific Island schools. Since 1996, 25 teacher education students have completed internships in Fiji, Samoa, Tonga and the Cook Islands. Evaluation of the Samoan action learning internship reports (completed after the completion of the internship as a reflection on the internship process) provides a way of comparing
cultural engagement and cultural (and teaching) internship modes in the differential ability to promote critical cultural reflection. It was originally hypothesised that the opportunity to live and teach in another culture would both accelerate and encourage critical cultural reflection. However, analysis of the action learning case study internship reports indicated that cultural immersion and teaching resulted in a more complex pattern of reflection in the students who undertook such cultural and teaching immersions.

Results

1. Compared to the pre-service teacher who undertook the cultural engagement mode courses, all the beginning teachers subject to cultural and teaching immersion exhibited extensive culturally referential reflection. The nature and depth of their experiences allowed them all to refer extensively to Samoan language, culture, learning styles, world views, procedures and processes and living conditions and customs. All of the reports contained advanced description of fa’a samoa as experienced in schools and classrooms, as the following example shows:

   The formal system of education in Samoa primarily adopts the teaching method of ‘chalk and talk’. Most classes involve the teacher writing on the board in English and then explaining the notes in Samoan, English, or a mixture of both. The students play a passive part in this process, as they are the recipients of the knowledge the teacher imparts. Learning is teacher centred, with the students having little or no input into what they learn. There is little student-teacher interaction or peer interaction and no independent exploration, or self-directed learning in this structured environment.

   This non-interactive process of learning originates at home, and in the community, where an informal system of education is in practice. This informal system of education is a traditional one concerned with passing on the basic skills and knowledge that are necessary for the maintenance of group identity and life. This form of education is not a progressive one, encouraging change or individualism; rather, it enforces conservatism and conformity. The family is the most important unit in the community and ones responsibilities towards the family take priority over any individual interests. Each member of the family has roles and responsibilities which must be carried out for the preservation of the family. (14)
All the writing of the cultural immersion students contained both significant and accurate descriptions of culture. As would be expected, in all cases these descriptions are considerably more comprehensive, informed and insightful than those prepared by the culturally engaged mode pre-service students. The quality of the culturally referential writing is so high that it has very been useful in in-service teacher education in Australia. This culturally referential writing was also used in induction courses and programs for new students wishing to teach and live in Samoa for internship.

2. Compared to the pre-service teacher who undertook the cultural engagement mode courses, all the beginning teachers subject to cultural and teaching immersion exhibited culturally dialogic reflection. As stated previously only 20% of the reflective writing of the cultural engagement model could be identified as culturally dialogic, where the reflective writing attempted to explain educational phenomena from a cultural perspective. All students of the cultural immersion mode demonstrated that they developed a dialogue with Samoan culture, and articulated new ways of explaining events and seeing pedagogic situations, based on their new cultural knowledge. All writings of the cultural immersion mode students incorporated extensive and comprehensive dialogic passages where knowledge, epistemology, and explanations of behaviour observed were juxtaposed and explicated. The researchers did not expect that all beginning teachers would reach this level, or be able to undertake such dialogic cultural reflection.

3. It was hypothesised prior to the collection of the data that critical cultural reflection would be significantly enhanced by cultural immersion, compared to the cultural engagement modes of teacher education. The original analysis of the critical cultural reflection writing showed that only 10% of the engagement model students could synthesize their new cultural information, and used it to:

- outline how they could improve their teaching by more appropriate and culturally sensitive pedagogy
- locate specific teaching and learning behaviour in appropriate cultural frames
- affirm and validate alternative explanations, cultures and epistemologies
- use this knowledge to question existing relationships, methods and explanations of teaching and learning.

In the reflective writings of the cultural immersion mode students, only 30% exhibited critical cultural reflection at the level displayed by the example provided below:
Discipline however, was not always administered by the teacher. On a few occasions when the noise level was too high and I needed to address the class, a student would hiss “Pisa” or ‘noisy’ in Samoan and the class would usually settle down. This form of self discipline usually occurs “once a trusting relationship is built between the student and teacher, the student is obliged not to do anything to jeopardise that trust and in most cases will compel others to follow” (Horsley 1999). Unknowingly, I must have developed some form of trusting relationship with a few students who remained loyal. These were the ones always to volunteer answers, write on the board, attempt an exercise, even if they were unsure of it, or help me maintain classroom control.

These relationships are built on trust respect and love and it is not unusual for physical contact or affection to be displayed between teachers and pupils, or for a pupil to vocalise how much they love their teacher. As the class indeed told me when I left the school. These social conventions contradict our concept of professional distance, both physically and emotionally, which is maintained by educators in Australia.

Here, in Samoa the pupil/teacher relationship does not end with the student but extends to their whole family, with the teacher knowing students’ families and often socialising with them. Because Samoan students are used to having quite close relationships with their teachers I would advise any teacher to make that extra effort in finding out about students’ backgrounds and meeting parents when it comes to Pacific Island students in the Australian classroom.

While this increase in critical cultural reflection is significant it is less than expected. Still, almost 70% of the beginning teachers in the cultural and teaching immersion mode do not display critical cultural reflection in their writing, despite being aware of alternative cultures, and having the ability to explain teaching and learning behaviour from alternate cultural paradigms. One is reminded of the phrase “you can lead a horse to water, but you can’t make it drink.” This result was also confirmed by analysis of the action learning or action research projects from the two-way inquiry learning, undertaken by teaching interns living and working in the Aboriginal schools in the Northern Territory.
The interns who were most effective were able to learn to become part of a people centred society. They were then able to come to understand the value systems of the students, their parents and indigenous staff with whom they worked. They shared an open life style and joined in wholeheartedly with community life. They were valued by the Principal and mentors for their contribution to the education of the students, and their willingness to fully engage in the life of the school. Most importantly they valued this culture and affirmed and saw themselves as questioning existing practices as a result of their new knowledge. They also possessed personal qualities, which enabled them to become teachers who serve, while retaining their personal dignity and self worth. They made every effort to gain knowledge of the kinship system, clan politics, language and culture and norms of behaviour, which characterised their community. Critically reflective writing focused on the important issue in learning how to become an effective teacher in their community, such as the kinship system, clan politics, Yolgnu culture and norms of behaviour and language.

Interns who were successful acquired this knowledge gradually from first hand interactions with Yolgnu teachers, students and community members, knowledge that can only be learned on the job, as the following example shows:

"The journey I have experienced ... has allowed me to reach the conclusion that one of the best ways to learn what it means to be an effective teacher in a remote indigenous community, is to realise that resources are primarily people. It is about building and maintaining relationships, whether it be Yolgnu family or my own family. Being recognised as an adopted relative within a Yolgnu family is paramount for relationships to develop within Yolgnu culture. The journey requires internal reflection and confirmation, always remembering to respect the personal needs of myself as a teacher and the needs of the community. It’s a constant learning environment that requires an unassuming, adaptable and open attitude."
CONCLUSION

Challenging cultures is a complex individual phenomenon requiring at least formation of both new identities and world views. McIntyre (2002) writes of disrupting the ‘dysconscious racism’ of American teachers through a process of ‘unlearning whiteness... where teacher perspectives about teaching and multicultural education are challenged to go beyond the economy of the stereotype.’ (McIntyre, 2002). Critical cultural reflection requires new understandings that recognise the dynamics of culture, accommodate change, create space for differences and most importantly ensures meaningful and successful participation in one’s community.

For pre-service teacher education students and beginning teachers it means coming to see another culture positively, and viewing it from the lens of possibility, as a source of new learning. Critical cultural reflections are the result of new cultural learning. Culturally critical teacher education students adjust their teaching practice to take account of their new cultural knowledge, and their teaching is informed by a cultural imagination. Their reflectivity allows them to question the cultural underpinnings of teaching and practices and empowers them to change for the benefit of their students.

Such reflection and imagination is only derived from serious engagement and immersion with other cultural groups. Serious engagement and immersion requires considerable interaction with the community, and long term connections with families and students outside the school. Through cultural engagement and immersion pre-service teachers come to learn about other cultures in depth, and explore the links between culture, behaviour and learning in its social context.
REFERENCES


Commonwealth Department of Education Science and Training (2001), *The 1999 National Survey of Teachers in Australian Schools*


Chapter 3

Educational Publishing
CHAPTER 3

Educational Publishing

3.1 The Publications


The first paper was published in a research monograph that was prepared by the Teaching Resources and Textbook Research Unit (TREAT) at the University of Sydney for a special conference held during the 2001 Frankfurt Book Fair. This conference, entitled 'The Future of Textbooks', was presented at an international colloquium on school publishing. The papers were developed by the leading consultant to the Publishers' Association in the United Kingdom (Keith Nettle), the London Institute of Education (David Lambert), the Georg-Eckert Institut Fur Schulbuchforschung (Falk Pingel) from Germany, and the TREAT research unit from the University of Sydney (Mike Horsley). The research monograph was designed to present current, cutting edge educational research to an invited group of the world's leading publishers. The colloquium was sponsored by the Publishers' Association (UK) the Australian Publishers' Association (APA) and SchulbuchVerlag EV from Germany. The research monograph attracted international interest and the TREAT unit sold 800 copies of the monograph to publishers and researchers world wide.

3.2 Research Purpose

The papers presented in the portfolio synthesise the results of classroom observational research on teacher and student use of teaching and learning materials. Few studies have observed the classroom use of textbooks and other teaching and learning materials. Most research on textbooks and teaching and learning materials is based on content analysis methodologies, where the textbooks themselves are investigated outside the context of their use. This research often infers aspects of use without observing the way teachers and students mediate this use in classrooms.
The development of the partnership with the Australian Publishers’ Association encouraged me to develop research instruments and methodologies that focused on the classroom use of teaching and learning materials. In the early 1990s I developed an observation instrument, the ‘Textbook Observation Recording Schedule’ (TEXTOR) and used it in six published and unpublished classroom studies. TEXTOR focused observations on the following aspects of classroom textbook use:

- the details and condition of the materials being used;
- the length of time taken to issue and collect materials;
- how the student gained access to materials;
- the length of time materials were used in teaching and learning;
- whether pre-reading, scaffolding or activation and assessment of prior learning took place;
- how students read the materials;
- what tasks were initiated by the teacher;
- whether the materials were to be used for homework;
- how the students used the materials in the classroom;
- what was the teacher's purpose for using the materials in class.
The observation record was computerised in the mid 1990s, increasing the richness and depth of data captured. The observation record was used to explore differences between novice- and expert-use of text, subject variations in textbook use, the impact of shortages of materials on teaching strategies, how printed materials were used in online learning environments, photocopying behaviour of teachers, and how teachers resource their lessons. A survey of this research was set out in an invited keynote presentation at the IARTEM conference in Estonia in 2001 (Horsley 2001).

At the same time researchers at the London Institute of Education were investigating the classroom use of textbooks. Studies undertaken in England by Lambert (1999, 2000, 2002) in geography classrooms were designed to:

- investigate the roles that textbooks play in the classroom;

- how textbooks were valued in different ways by teachers, pupils and parents; and

- in what ways textbook characteristics such as the content, format and design and availability impede or facilitate teaching and learning.

These studies resonated closely with the classroom observation research I had carried out in Australia. It was therefore decided to combine the results of the two research projects and prepare a paper that surveyed the findings of classroom based textbook research. In addition, other studies from the research literature were analysed to provide a comprehensive overview of observation-based textbook research. This overview comprises the first paper in this chapter and was prepared
to highlight the main findings for an audience of publishers. The paper developed ten key propositions about the use of textbooks in classrooms.

The overall purpose of the research and the papers presented is to locate textbooks and teaching and learning materials in classroom pedagogy. The other papers continue this focus. The 2003 IARTEM keynote paper (Horsley and Walker 2003) added a socio-cultural interpretation to this earlier research and also presented new research on teacher selection of teaching material, photocopying behaviour and the use of these photocopies in the classroom.

### 3.3 Research Methodology

The research presented employed a range of qualitative and benchmarking research methodologies. Reynolds has argued ‘(t)he content of the curriculum(and) the books and material used and classroom environments of effective school organisations have also not been studied in detail... an omission which hampers the integration of the bodies of knowledge on effective schooling and effective teaching’ (1990:164-5). The research presented is focused on the direct observation of ‘classroom environments’ (specifically the interaction of pupils, teachers and text) within the context of how teachers and students use teaching and learning materials.

It should be mentioned that the original textbook observation schedule was subject to considerable revision and refinement as the research developed. The original schedule has proved adaptable to ICT information and communication technology environments.
In the third paper presented in the research portfolio, on the selection of teaching and learning material by teachers and the study of their photocopying behaviour, I was able to use the data provided by Copyright Agency Limited (CAL) during their survey of school photocopying. This legally required survey obliges CAL to document school photocopying in approximately 120 schools per annum. The information is used to identify licence payments by school systems to CAL that are then distributed to publishers and authors. The research identified the most photocopied textbooks in Australia. It examined the photocopied pages from them, undertook content analysis of the pages and then undertook pilot observation of teachers’ use of these texts. This is the first time this type of analysis has been undertaken in educational research.

3.4 Co-authorship

The chapter presents two co-authored papers. The first was jointly written by Horsley and Lambert based on their prior classroom observational research. The paper was proposed by Horsley, as was the design of the propositions. The second co-authored paper was substantially written by Horsley, as was the concept and design of the paper. Walker wrote the sections on socio-cultural theory. The research on which the paper was based and the other sections of the paper were developed and written by Horsley.
3.5 Recognition of the impact of the research

(i) Influence of publications

My published research has been widely used by the educational publishing industry to develop materials which more closely match the needs of teachers and learners. The studies have led to the development of a partnership with the Australian Publishing Association and the wider Australian educational publishing industry. The research has also featured prominently in educational publishing industry training and professional development of the publishing industry, leading to annual professional development presentations at publishing seminars and training and professional development workshops.

(ii) Contribution to professional practice

The research has also led to the development of new teacher professional development courses for teachers at the Masters of Education (continuing professional development) level and pre-service teacher education level. These new courses on the use of teaching materials in teaching and learning have assisted in raising teaching standards in New South Wales. By raising awareness of deficiencies in teaching methods, and also the quality and quantity of textbooks available in schools, my research can claim success in improving professional practice.

Over the years, the research that I have conducted has been utilised in the training of educational publishers, not only from Australia, but also from China, Taiwan, Thailand, Malaysia, Canada and New Zealand.
The research is recognised through my establishment of the *Australian Excellence in Educational Publishing Awards* in 1994 (conducted annually since then). The catalogue of publications judged as meritorious by the annual awards is disseminated to every library and school in Australia. This competition has constituted a significant innovation in educational publishing during the past ten years. The research I have undertaken on textbooks and educational publishing has informed the development of these awards. *The Australian* newspaper has been happy to extend a significant sponsorship to the Awards, which they see as having a major impact on educational publishing in Australia.

As a result of the research that I have conducted the Teaching Resources and Textbook Research Unit is considered one of the leading international textbook research institutes. It is the first listed on most web search engines under textbook research. In 2001 I was elected to the Board of the International Association for Research on Textbooks and Educational Media, and in 2003 was appointed to be foundation managing editor for the new IARTEM-*Journal Research on Textbooks and Educational Media*. 
PAPER 1

The Secret Garden of Classrooms and Textbooks: insights from research on the classroom use of textbooks

Mike Horsley (University of Sydney) and David Lambert (University of London)

Introduction

‘Interest in textbooks waxes and wanes. When interest is high...researchers direct their efforts toward studying what textbooks are like and how they come to be that way...When interest is low, textbooks receive scant attention...Through it all, textbooks remain remarkably unchanged, a central feature in most classrooms across the country.’ (Chambliss and Calfee 1998, p xiii).

The authors of Textbooks for Learning go on to say that estimates show that textbooks determine 75 – 90% of instructional content and activities in schools throughout the USA. So dominant are textbooks in the education system that Ernest Boyer has suggested that choosing textbooks ‘is the closest thing that we have to systematic debate over what schools should be teaching (cited in Chambliss and Calfee 1998 p 2). Although contextual factors differ (for example England has a national curriculum whilst in most federal systems such a thing is difficult to contemplate), generally the school systems of the UK and Australia are, like the USA, textbook dependent.

In English and Australian secondary schools teaching resources usually are purchased by Heads of Department and, although there are significant funds spent on audio-visual materials, photocopying and computers, textbook purchase still accounts for by far the largest item of expenditure in the resourcing of teaching and learning. Even so, there is hard evidence (United Kingdom, Centre for Successful Schools, Keele, 2001 Australia, Horsley and Laws 1993 and Laws and Horsley 1992, Young and Horsley 1995) that in State-funded schools the spending is inadequate, with just under 50% of pupils having to share textbooks in their lessons (which limits how they may be used by pupils and teachers). Nevertheless, textbooks are used as a basis for around three-quarters of lessons (Lambert 1999), confirming the USA figures cited above, and are clearly seen as a vital component of contemporary schooling. The Keele research has shown that pupils consistently value textbooks very highly, possibly more so than do teachers, for earlier research (Lidstone 1985; 1992) identified the ambiguous attitude often held by teachers towards textbooks: though textbooks were found to be prominent in their classrooms, teachers often indicated a belief, or learned position, that creative teachers prefer not to be dependent on them.

However in general, very little research on the classroom use of textbooks and other teaching and learning materials has been conducted. Very little research into the use of textbooks has been based on observation of teachers selecting textbooks and teaching materials and using them with their students in their classrooms. Very few studies have explored how students use teaching and learning materials (together or independently) to learn. Such research is very expensive and time consuming. It requires access to schools, teacher and classrooms. Classroom observation research requires research by
trained teachers (as well as researchers) who are sensitive to the ways teachers and classrooms operate and can interpret the behaviour of students and teachers sensitively and analytically.

Most research about textbooks is either in the form of surveys of supply and expenditure, sometimes supported with questions about perceptions of textbook use, or is concerned with content and/or style analyses of the textbooks and teaching materials. Occasionally, there are even simulated studies, where teachers demonstrate their possible use of teaching and learning materials in a laboratory style environment. Much of this research is limited. Textbooks and text resources have for many years been studied as if they were inert artefacts. As a result, very little is known about the specific ways employed by teachers using textbooks and teaching resources with their students. Publishers in particular, though producing for classroom markets and conducting market research, have had little access to the real functional use of teaching and learning materials and the meaning made of them by teachers and pupils.

Such research that does exist on the classroom use of textbooks and teaching resources summarised here can provide a basis for developing and defending policies for the more adequate resourcing and funding of teaching and learning in the classroom. For example, such research may help clarify the ‘position’ of textbooks within learning environments by suggesting what textbooks can achieve in terms of supporting learning, and how their potential can fully be realised. Classroom research on the use of textbooks and teaching materials undertaken by Horsley, Laws and Young from the Teaching Resources and Textbook Research Unit (TREAT) at the University of Sydney, and by Lambert at the University of London Institute of Education, has identified a number of crucial ‘propositions’ vital to understanding the future of school publishing. Some of the propositions are quite clear and can be propounded confidently. Some are less so and are consequently proposed with a little more caution or hesitancy. They all overlap to some extent, or at least are interrelated. Through what follows we try to signal further research needs and opportunities.

Given the likely continuation of the prominence of textbooks in schools, albeit within rapidly changing wider learning environments, it is perhaps surprising that research undertaken on classroom use of textbooks is so sparse. If textbooks are to function to their fullest potential within the digital, information rich world increasingly familiar to most young people in more prosperous countries, we need to continue to open up the ‘secret garden’ of classrooms occupied by teachers and students.

The Key Findings and Propositions

The key projects and research studies that we have drawn from are listed for convenience at the end of this paper and of course can be consulted directly for fuller details. Our propositions are:

- The use of textbooks and other publications for school students is undergoing rapid change;
- Textbooks are increasingly pedagogic explorations of information;
- Multiple texts and resources now inform much, if not all, teaching and learning;
- Teachers and schools frequently make their own ‘textbooks’;
- Funding has a critical impact on the use of materials in schools;
• Different teachers use textbooks and teaching resources in different ways;
• Textbooks are written and used in different ways in different subjects;
• Textbooks are dead! Long live textbooks in the training of new teachers.
• Textbooks have a part to play in enabling teachers to reach performativity targets
• Textbook shortages impact on educational standards
• Textbooks are not going to be replaced by online learning environments in the near or even distant future.

These propositions are grounded in observations and analysis of classroom practice.

**Propositions for Understanding Textbooks in Classroom Settings**

1. The use of textbooks and other publications for school students is undergoing rapid change

Rapid changes in curriculum, development of new theoretical understanding of learning and applications of new technologies are leading to new possibilities of using teaching and learning resources in the classroom by teachers and students. Customisation of teaching and learning resources has long been the desire of teachers. Customisation is now being realised and is now technically possible. Our research shows that teachers can identify and sometimes create appropriate teaching and learning resources to meet curriculum specifications in ways that meet the individual learning needs (in terms of learning style, interests and motivation) of their students. Classroom research is showing that teachers take a mixed approach, often starting with an internet search (Horsley, 2001 b), scanning through the available textbooks on the market and increasingly have access to the technology to customise teaching and learning resources. In this scenario, textbooks inform teaching and learning and still have a place but in different ways than in the past. This trend is accelerating rapidly and needs to be understood more fully.

2. Textbooks are increasingly pedagogic explorations of information

When the focus of the curriculum was primarily the identification of what was considered to be worthwhile content, the textbook framed the basis of the structure of study. The emphasis was one ‘delivering’ the material to be learned. Changes in how the curriculum is understood, and developments in the study of learning (leading to ‘constructivist’ views of learning), require that resources are used to make meaning. The constructivist classroom is less subject or teacher centred and does not depend on a single information source. Current socio-cultural views of learning emphasise the creation of shared understandings, cognitive scaffolding, guided construction of knowledge and building on prior knowledge. As with other elements of the whole ‘educational environment’, the evolving textbook reflects, reinforces and guides these trends, to the point where it has been observed that text (by which is meant extended prose) has ‘disappeared’ from geography textbooks (Walford). Textbook use is changing therefore as they are increasingly designed as pedagogical devices to help readers generate meaning, this often being mediated by the teacher. It has been observed that such a concept of textbook design actually may limit their ‘explanatory potential’. This trend, observed in classrooms, gives rise to some fairly basic questions about the role of the textbook in learning and how its place is perceived in relation to supporting the
teacher and learner. For example, to what extent can (should) textbooks be authored and designed to promote progressive, broadly constructivist pedagogies? If they are so designed (and we have come across textbook which are claimed to be ‘teacher proof’ in this respect!) do they, paradoxically, lose the flexibility that Chombliss and Calfee (1998) claim is a characteristic of a well-designed instructional text? A number of classroom based research studies are currently exploring this very question.

It remains to be seen whether the increased prescription and outcomes driven nature of recent curriculum changes (either from National Curriculum movements or from state and regional centralised syllabuses) with external examinations attached might force textbooks to return to the past – as information delivery vehicles from each subject, rather than as pedagogical explorations of the subject.

3. **Multiple texts and resources now inform much, if not all, teaching and learning**

It naturally follows that if textbooks are regarded as a ‘pedagogical devices’, they are also understood to be but one component of a ‘resource space’ that teachers use to provide the appropriate teaching and learning opportunities for their students. This resource space includes the schools’ purchases of new textbooks and materials held in school and community libraries. It includes the use of existing school textbooks, kits and packages produced by publishers, old materials stored in the school and perhaps those produced by departments of education, subject associations and curriculum authorities, special interest groups and non-government organisations (NGOs). Increasingly, this resource space is coming to be dominated by teaching and learning material crafted to support specific central curriculum authority initiatives with national templates prescribing teaching and learning approaches and resources. In Australia, in history, civics and citizenship, such development represents a version of a ‘national curriculum.’ (Young 2001) The teachers’ personal purchases of texts and their own resources are significant here. Also in this list we might add various audio-visual products including those derived off-air which are increasingly treated by teachers as the ‘shared text’ on which to base learning. Increasingly the internet is a source of information and lesson material is being used by teachers in preparing their lessons. Teachers then are using multiple sources and multiple texts in the classroom - often constructed from an amalgamation of the existing available resources.

The important issue of the use of multiple texts in classrooms relates to the previous proposition regarding pedagogy. In the context of geography in the secondary curriculum, David Waugh has described (Waugh 2000) his concerns as a teacher guiding the design of his best selling key stage 3 text (for 11-14-year olds) *Key Geography*, particularly the need to provide an selection of resources, readily available to the pupil. With this notion in mind the books were assembled from formulaically designed double page spreads. Waugh’s books are by no means the prime suspect in the case of the ‘disappearing text’ (Walford op cit). However, the spreads arguably appear to be more concerned simply to exhibit the multiple elements rather than with connecting to the students’ experiences and maximising comprehensibility or developing with pupils a meaningful and current geographical ‘lens’. A similar trend has been noted in Australia as a result of an analysis of eight currently available geography textbooks:
Regardless of the state curriculum for which the book is intended, or whether the focus is on geography as a discrete subject or as part of an integrated course, the “look” of the books is remarkably similar. All have an abundance of full colour photographs. All are arranged as two-page or four-page spreads. Most pages are at least 50% graphics. All contain a wide range of data sources, including graphs, tables, cartoons, diagrams, photographs, maps and textual information. All have a range of student activities, although interestingly, relatively few of the activities require students to practice working with the data sources provided” (Lidstone and Wiber 2001).

Similarly, exploration of History Teachers use of textbooks shows that teachers see extended narrative, the core of history education as extremely difficult for their students. As a result there has been a trend to write and use history texts with multiple sources of information for use by teachers – which may neglect the role of the core of history, narrative and making sense of the contested nature of the interpretation of the past. (Paxton 1999, Wineburg 1994)

The fundamental question raised by these observations relates to the place of textbooks within the wider resource space: what is the optimal role of the textbook in the varied and increasingly dynamic resource space for teaching and learning in schools?

One study (Young and Horsley 1995) examined the resource space in the history department of eight Australian secondary schools. The results illustrated that each schools resource space varied. In two of the eight departments, purchases of new commercially available textbooks represented 50% of the total spending for preparing teaching and learning resources for the new curriculum. In the other six departments, the production of school-based texts was the major way of preparing teaching and learning resources for the new curriculum. This study also showed that there was wide variation in total spending in preparation for the new course, non government schools providing six times more resources for their students to support their teaching and learning than government schools. All of the school subject departments developed a resource space that included re-using existing texts and materials, and purchasing kits and videos

4. Teachers and schools frequently make their own "textbooks".

Lambert’s 1999 research (Lambert 1999 and the Young and Horsley study 1995) and a subsequent reflective account of his role as head of department (2000), illustrated the familiar pattern (at least in some subjects) whereby schools and teachers construct their own texts, often, *though by no means always*, for cost saving reasons. There are several reasons why teachers place very high value on their own production of texts. For example, the need to elaborate or build on students’ ideas, the need to connect with students existing knowledge and daily lives and the need to provide appropriate activities and tasks to enable students to reflect and develop thinking. There is also often a felt need to maintain currency and topicality in the face of funding shortages which seems to encourage teachers in schools to prepare and photocopy their own texts (ironically, not always cost effectively and with some dubious legality).
SUMMARY OF A STUDY ON RESOURCING A NEW COURSE
in AUSTRALIA

This study was conducted in 1995 and involved observations in schools, the analysis of documents and interviews with teachers, inspections and stocktaking in school book rooms in a sample of 10 secondary schools in New South Wales. The schools were introducing a new History Course Years 7 – 10 in 1992-96.

Central to the planning for the new course was the development of short faculty developed texts, tailored to supplement course content and assist student learning. Five of the sample schools had prepared these types of materials. Half of the titles had been recycled from texts prepared for the 'old' course. These resources had been developed for a number of reasons:

• the collation of a wide variety of sources to support school-based curriculum
• the provision of appropriate content, activities and approaches to meet learning needs, especially in the area of language acquisition.

Budgetary concerns also figured in this school-based equation for ensuring adequate resources. The costs involved in their development did not come from faculty funds, but were drawn from utilising school consumables and facilities such as paper and photocopying.

In one school, the materials were designed to be used in association with a teacher's handbook. These books had the characteristics of a topic book; thirty to sixty pages in length, containing stimulus material photocopied from commercial texts, professional journals and magazines, with the inclusion of teaching/learning activities, strategies and approaches.

All the materials claimed to context related, targeting anything from language and other learning based requirements to local area studies. Another of the sample schools had prepared a series of worksheet packages which contained faculty developed materials to service various topics. In this instance, no commercial texts had been purchased.

5. Funding has a critical impact on the use of materials in schools.

The teaching resource and textbook research unit at the University of Sydney (TREAT) has conducted a number of studies which have looked at the impact of differential access to school textbooks and teaching and learning materials. In one 48 school study (Laws and Horsley 1992), it was found that students in private schools had access to over 6 times the resources compared to students in government schools. This study and subsequent studies (Horsley and Laws 1993, Young and Horsley 1995, Horsley 2001) measured the impact of such differential resource access on teaching and learning. It was shown that reduced resource provision significantly influenced the teaching and learning strategies used in the classrooms studied.

These observational studies showed that in government secondary schools, students used class sets of texts that were kept in bookrooms. Only students in non-government schools had their personal copies of texts. Such a pattern meant that teachers found it difficult to set homework tasks based on texts in government schools (not to mention the instructional time which is lost through the distribution and collection of texts each lesson). Also when students had to share books the range of teaching strategies which could be used by the teacher was limited. These studies found that the students' access to textbooks even influenced the way texts are read in class. In twenty-four percent of the observations the main way that reading by the students took place was in a round robin activity where much instructional time is spent in getting information from the text rather than using this information and constructing meanings from it. When students share texts reading aloud around the classroom is a typical activity, despite its limitations as an instructional strategy.

Lambert’s (1999) small scale research in London secondary schools suggested that certain ‘coping strategies’ (resulting at least in part from significant shortages of funds), for example never allowing pupils to take textbooks home with them and using half class-sets (pupils having to share books), have become routine in some schools. When books cannot be taken home the potential of the book is severely constrained. For example, pupils may have a copy of the page to work from at home but no opportunity to read what came before, nor what comes after, and thus no incentive is given for individual exploration of the text. Thus, during an experiment when heads of department were provided with potentially limitless textbook provision for Year 8 geography (supported by the Publishers Association), two out of seven chose to ‘buy’ two copies of the book for each child. This allowed for one book for class and a copy for home use – specifically because it was felt that traditions of home study were so underdeveloped. During the same experiment, teachers who found themselves teaching classes with at least one copy of the book per child rather unsurprisingly found the classroom management of pupils’ behaviour became more straightforward.

In recent years, work at the Centre for Successful Schools at Keele University has systematically surveyed the supply and use of textbooks in schools in England. A consistent finding is that textbooks are highly valued by the pupils, but also that very few state funded school are adequately supplied with textbooks to the extent that pupils have ‘ownership’ of them. That is to say, they are shared and tend to be given out when needed (sic: in other words, when the teacher decides they are needed and has access to
them). Recent research (Watson 2000) has also indicated that the shortage of textbooks in schools has had and will continue to have an impact on school effectiveness. In English primary schools the shortage of explanatory subject specific textbooks is if anything greater than in secondary schools, for the lack of a ‘course text’ which can be taken home almost certainly impairs the capacity of parents to support their children’s schools work (Marland/schools book alliance 2001)

In reality almost all money which goes to schools is spent on staffing. Very little is spent on materials and the purchase of a class set of text books is a major outlay for any school. A result of this is that a majority of students in government schools are unable to take books home. This impacts on the way in which classes are taught, and the type of materials likely to be copied. The ways textbooks are used often are sub-optimal therefore; indeed, the purpose and potential of textbooks is defeated in such circumstances. They are disaggregated and thus lose comprehensibility (or a sense of the ‘big ideas’), they lose any sense of narrative the author might have intended and they are not usable for seeking or checking explanation (and therefore fail to encourage reflection).

Some schools develop strategies to maximise the use of text resources by using central bookrooms or even book boxes (containing assorted texts for ‘consultation’ by pupils to support topic work), instead of providing each student with a copy of the text for the year (or period of study). In such schools, where the teacher must carry the books to class, a significant amount of teaching time is spent in actually managing and distributing the texts. Less homework can be set from texts. Studies have shown (Lambert 1999) that in schools where the texts are not kept by the students a lot of class time is spent reading aloud from texts rather than having students read the texts at home and do exercises related to the texts in class. In short, pupils’ relationship with the text is less independent under such circumstances.

6. Different teachers use textbooks and teaching resources in different ways.

Following Shulman (1986), it is now widely accepted that teachers develop ‘pedagogical content knowledge’. This is the specialised professional knowledge that teachers use to interpret the students prior learning, the concepts that students will find difficult, the most appropriate teaching strategies and the resources most useful in teaching. Pedagogical content knowledge arises from the teachers need to represent and teach their subject to children. It consists of three main components: knowledge of the subject matter, knowledge about students and their characteristics and thirdly, knowledge of the school, community and classroom contexts in which the learning takes place. Pedagogical content knowledge inevitably embodies, invokes and focuses on ‘those aspects of the subject that are most germane to its teachability’ (Shulman 1987). This knowledge includes the most regularly taught topics, the most useful forms of representation, most successful analogies, demonstrations, examples and illustrations, and the ways of making the subject familiar and understandable to others (that is, the students). Thus, pedagogical content knowledge can be learned and is often passed on within a professional community such as that which exists in a school subject department. Though teaching can appear to be highly individualised therefore, the strength of the school or departmental culture can be so powerful that (in our view)
CHAPTER 3 Educational Publishing

professional knowledge is sometimes shaped significantly by received wisdom and observed practice. New teachers often feel most comfortable teaching what has been taught before, using ‘authorised’ methods. This has implications for how we understand the role of the textbook, as the following explains.

Of course, though teacher cultures may be inherently conservative as intimated above, teachers do develop varied pedagogical content knowledge and use teaching resources in varied ways. For one thing, teachers seem to differ significantly in the value they place on their own disciplinary knowledge in shaping their pedagogic knowledge (Lambert forthcoming). That being said, teachers generally, and perhaps surprisingly, show a reluctance to talk about teaching and learning in subject specific ways. For example, a recent study in London reports that mentor debriefings with science trainee teachers talked science for between 5 and 10% of the time only (Frost and Levinson 2001). It is as if the disciplinary content is taken to be self-evident and in no need of dispute or debate. It is not surprising therefore that some studies have shown that teacher lesson and programme planning is heavily dependent on the resources they have to hand and choose to use. For some teachers, both novices and their more experienced mentors, the textbook is the curriculum, or at least it delimits the essential subject matter.

Research has begun to look at the place of the textbook therefore. Alverman (1987) observed science teachers and how they used textbooks in discussions. Hinchman (1987) observed textbook use by three teachers through observation and interviews. She concluded that teachers exhibited three different types of textbook use; methodological coverage, textbooks as an information source, and reference use in higher level class discussions. Lambert’s (1999) work resulted in a different – though clearly related - threefold division of the ways textbooks are used by teachers: as coursebooks structuring the ‘scheme of work’ (‘coverage’), as a means of motivating or stimulating learning (more than merely a source of information) and as a teacher support (acknowledgement that textbooks can play a part in effective classroom management and organisation). Some recent work by Horsley (2001) confirms the suggestion that teachers use textbooks to support their professional needs and inform and shape their pedagogical content knowledge. Again, this happens in different ways depending on whether the need is to provide informational or instructional resources for learning, sources of student activities and tasks, or whether there is a pressing need to find ways of occupying (‘engaging’) the pupils.

There is considerable scope here for more work. There is a surprising lack of attention paid by teacher educators and trainers to how novice teachers are inducted into the use of textbooks, and their wider role in interpreting the curriculum and shaping pedagogy. (Loewenburg, Ball and Cohen 1996) The triangular relationship between pupil-teacher-text is not really featured during teacher training. It is consequently not surprising that (arguably) the full potential of textbooks is not realised by teachers. Within this context Chambliss and Calfee (1998) have provided a useful basis for further work. Though they concentrate more on the optimal design of school textbooks, identifying comprehensibility, curriculum and instruction as their basic template for analysis, they do link this to wider questions of teaching and learning – for example the design of lessons. However, they stop short of theorising what we may call ‘textbook pedagogy’ and there is to our knowledge no work on how such a notion might relate to a theory (or the practice) of teacher development: how, for example, may teachers and pupils use
textbooks more ‘effectively’ with pupils? To what extent is ‘effective’ use dependent on
the design of the textbook, the supply or availability of textbooks or the quantity or
quality of teacher preparation.

Studies of teacher perceptions about textbooks (Horsley and Laws 1993, for example)
show wide variations in teacher beliefs about the value and use of textbooks. As we
noted in our introduction, studies of student perceptions show more uniformity about the
value and importance of textbooks. The History and Youth study (Von Borries 1999)
which surveyed over 30,000 students in different countries about their history textbooks
showed also that student and teachers perceptions are at odds, students having a much
more positive perception about the truthfulness, breadth and value of their textbooks than
their teachers.

7. Textbooks are written and used in different ways in different subjects.

Following the previous discussion of the varied nature of the ‘pupil-teacher-text
interface’ it is acknowledged that one of the significant differences between teachers is
of course that they teach different subjects. Different subjects make different use of
textbooks, which reflects the way that textbooks are written in different subjects.
Textbooks have a structure and pedagogical approach that is germain and central to their
discipline. Each subject discipline emphasises different modes of inquiry, different
language, discourse and the underpinning concepts (the big ideas) that permeate different
subject disciplines naturally exert considerable influence. Thus, textbook use varies. For
example (at the extremes), maths is very singular and English even more so. Maths is
mainly about worked examples to illustrate the algorithm, and much practice. English is
peculiar in not really having a disciplinary structure, at least not one that finds easy
expression at school level: the textbook is the set text.

The use of textbooks differs between different subjects possibly because the place of
textbooks in the resource space of the subjects varies and because assumptions
concerning pedagogy also vary between subject communities. Soniak and Perlman
(1990) in their United States study of student perceptions of textbooks concluded that
‘textbooks provide the data with which students and teachers work, pose the questions
that define how the data should be understood ..... and that textbooks are used in
significantly different ways for different academic subjects.’ (Soniak and Perlman p
436) The studies undertaken by TREAT also show that textbook use in subject
classrooms varies in a range of ways, from frequency of use to the completion of
textbook activities. These variations have also been noted in other classroom observation
studies.

Almost certainly the implication to be drawn here is that teacher training in ‘textbook
pedagogy’ cannot be undertaken ‘generically’ and requires the full texture provided by
subject specific treatment. This will only be possible with a more complete
understanding of the pupil-teacher-text interface in the different school subjects.
Following this, it may not be unreasonable in the future to expect teachers across the
whole curriculum to be able to induct pupils fluently into how the use of a specialist text
may indeed vary between their subject and others (and indeed other forms of text,
including the internet). The explicit coaching of students in these matters is probably not
commonplace in secondary schools, although in England the government’s lauded
‘literacy strategy’ has the capacity to have impact in this respect (so long as the textbooks are available in sufficient numbers across the curriculum subjects).

B. Textbooks are dead! Long live textbooks in the training of new teachers

Research has shown (Horsley and Laws 1993, Horsley 2001, Loewenburg, Ball and Cohen 1996) that textbooks are influential in the preparation of new (pre service) teachers. Despite the apparent universal condemnation by curriculum developers, teacher associations and teacher educators alike, textbooks prepared by commercial publishers are used significantly by teachers and teachers in training as the main source of subject content to be taught.

We have already noted Boyer’s remark that textbooks are, in effect, the curriculum, at least in the sense that they spell out what should be learned (and increasingly, as we have also noted, how it should be learned). In England, there seems to be common agreement that one of the reasons that Waugh’s Key Geography assumed such a dominant position in key stage 3 geography (it has been bought by around two-thirds of secondary schools), was that it was the first on the market that convincingly could claim to ‘cover’ the detailed curriculum specification set out in 1991 by the government. This was a complex and overburdened curriculum and there is evidence that the book series, once established, became the workable substitute; for example, in many schools the key stage 3 scheme of work merely follows the books chapter headings. This is perhaps a particularly stark form of the dual identity teachers adopt described by Lidstone (1985; 1992) and cited in our introduction: though textbooks were found in his research to be prominent in most geography classrooms, teachers often indicated a belief, or learned position, that creative teachers prefer not to be overly dependent on them.

But it is also a good example of the significant role played by textbooks in relation to teacher preparation. Australian research shows that more than 60% of trainee teachers admit to being reliant on school textbooks during practical school experience in order to access the content of the curriculum. Anecdotally, we can confirm that trainees in England (and indeed, experienced teachers) also rely heavily on school textbooks for this purpose. Though some curriculum purists may object to such a state of affairs, arguing that it is the ‘professional responsibility’ of the teacher to select and organise the content of the curriculum, we can see no difficulty so long as the textbook is understood to be one (albeit very significant) component of the resource space. There may well be a difficulty, however, if the balance of the chosen text is given more to the ‘pedagogical adventure’ than to the selection and organisation of worthwhile and relevant material.

A number of possible research avenues open up from this point. For example, in what ways can (or should) that part of teaching competence based around having something worthwhile to teach (represented in England by the Teacher Training Agency’s professional standard known as ‘subject knowledge’), intersect with the use of a textbook? Lambert (forthcoming) has attempted to distinguish a broader and deeper notion of ‘subject expertise’ from the rather narrower official conception of subject knowledge. The latter tends to emphasise the ‘secure and confident’ knowledge of the syllabus specification (or text) rather than the possibly much more contingent and contestable sense of being an expert within a subject field or discipline. In other words, we should expect that the expert teacher is able to bring something to the school textbook, as of course will the pupil. In the case of the teacher, it may well be their sense
of being a subject expert in command of the ‘big ideas’ of the discipline, which will enable them to ‘see’ the book in terms of its potentials and limits – and how it may be used by the pupils within the wider resource space. The subject expert is in a good position, therefore, to select the textbook in a manner that is fit for purpose. For this to take place consistently we need, as has already been remarked, a more sophisticated understanding of the pupil-teacher-text interface.

9. Textbooks have a part to play in enabling teachers to reach performativity targets

There can be no effective implementation of educational and curriculum reform unless schools are able to access the necessary teaching and learning resources that enable them to respond to challenges set by the government and inherent in the reforms themselves. In England there is clear evidence that more books would enable teachers to focus classwork and homework to greater effect. It is most likely that subject teaching across the curriculum would benefit from better books resulting, for example, from the implementation of the kind of design principles identified in detail by Chambliss and Calfee (1998). Finally, it is in our view almost certain that learning gain benefits will result from the better use of books. Although research on the classroom use of textbooks is sparse around the world, what evidence that does exist suggests that classroom use is limited and governed by both quantitative and qualitative aspects of textbook provision in schools.

It would be useful both for educationists and policy makers to derive from research some form of effectiveness measure that could reasonably indicate the outcomes of what could be relatively modest additional investment in textbook resources. For a number of reasons a simple universal index of some kind is not available and in any case would not be credible, but carefully designed case studies of textbook provision and use in different school contexts, and in various subject departments, could have enormous benefits, not least for training purposes.

10. Textbook shortages impact on educational standards

As has been implied strongly in the previous section, our review of research concludes that textbook shortages, caused for whatever reason, have impact on teaching and learning and ultimately on educational standards. Shortages may result from budgetary constraints or from spending decisions that do not place value on textbook provision (in the sense that a department might consciously decide to divert money from textbooks to the photocopy budget for example). Either way, a teaching team will be left to handle and guide learning in a manner which is inadequately supported – that is, if provision falls to below one book per student per subject in the secondary school. In the majority of state funded schools in England this is precisely the situation that now prevails. Teachers have learned to cope, often believing that their practice is superior. It is almost certainly more creative in the sense that teachers need to create learning materials – around 2.5 pages per pupil per lesson according to recent Australian research. But it may be appropriate now to ask whether teachers’ creative powers are best deployed in this way. To be sure, good teachers will always create excellent original lessons. But, they may not have to do this everyday to be effective. Indeed, research may help to identify where best teachers should direct their creativity; whether, for example, too heavy an emphasis on the creation of materials deflects teachers from the relational ethic that lies at the heart of
good teaching based upon a deep knowledge of individuals and their learning gain (or to put it crudely, a too heavy emphasis on the inputs at the expense of understanding and enhancing the outputs).

11. Textbooks are not going to be replaced by online learning environments in the near or even distant future

For supporters of online education, educational technologists, politicians and many education administrators the future of textbooks is predictable. Textbooks, like other print cultures are expected to vanish into the internet trash compactor. In the words of Jason Epstein (2001), traditional publishing like textbooks will be an abandoned technology, ‘irrelevant to an electronic future’. Such views are at odds with the evidence base of research. There is hardly a single research finding from the last fifteen years of research that convincingly demonstrates that web-delivered education achieves greater learning gains than other modes of education. Like the collapse of the technology bubble in the economy, the old education, like the old economy has proved and is proving to be remarkably resilient. The emergent classroom research presented in this monograph (Horsley 2001) on the role of textbooks in the online classroom, supports a view of that the introduction of the internet, ICT and flexible delivery will cause textbooks to be used in different ways than at present. But textbooks will continue to be a feature of all classrooms. As Michael Apple observed some considerable time ago: ‘Whether we like it or not, in the United States and an increasing range of other countries, the curriculum in most schools is defined by the standardized, grade-level-specific textbook in reading, mathematics, social studies, science and so forth. Yet we know almost nothing of its forms of production, distribution and consumption.’ (Apple 1989 p 12; our emphasis). We still don’t, and in the meantime the place of textbooks in the ‘resource space’ occupied by teachers and pupils becomes ever more important to clarify.

Conclusion

The potential research agenda identified through our propositions is enormous and needs prioritizing. Broadly, this agenda lies within what we have called the pupil-teacher-text interface, pedagogical content knowledge or elsewhere (Lambert 2000) ‘textbook pedagogy’, a field that would appear to be taken for granted, often as a ‘given’. However, during these new times in which voices can be heard claiming the end of knowledge (Barnett 1998), or at least the end of the textbook, we feel there are few if any ‘givens’. Even the term textbook cannot be assumed to have a given meaning. What this implies is a need for research that is committed not to the empirical search for ‘effective’ textbook use as defined by the producer (the publisher, designer, author), but to the uncovering of meanings attached to textbooks by the consumer (teachers and pupils). How do teachers and pupils make sense of the textbook within the context of wider learning environments, and make use of them?

It is worth reflecting on the realisation that investors in the new economy may have escaped some of their losses in recent times if they had sought an understanding of how the internet was being consumed - rather than being satisfied by how the technologists said they thought it should, or could, be used. Anthropological research showed at an early stage that people did not envisage using the web for shopping so much as for finding things for free: it is then, not surprising that some of the more extravagant attempts at e-commerce have failed. In a similar sense, Michael Apple (1989) again
expressed a concern which still has not been addressed seriously in education. On the 'mad scramble to employ the computer in every content area' he asserts,

‘If it can be packaged to fit computerized instruction, it will be, even if this is inappropriate, less effective than the methods that teachers have developed after years of hard practical work, or less than sound educationally or economically. Rather than the machine fitting educational needs and visions of the teacher, students, and community, all too often these needs and visions are made to fit the technology itself...

...Our task as educators is to make sure that when it enters the classroom it is there for politically, economically, and educationally wise reasons, not because powerful groups may be redefining our major educational goals in their own image. We should be very clear about whether or not the future it promises our students is real, not fictitious.'
(Apple 1989, p173-4)

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New Studies on the Classroom Use of Teaching and Learning Materials

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Introduction: Studies Conducted by the Teaching Resources and Textbook Research Unit

This paper will report on a number of studies conducted by the Teaching Resources and Textbook Research Unit (TREAT) in the Faculty of Education at the University of Sydney.

The TREAT Unit (http://alex.edfac.usyd.edu.au/LocalResource/TREAT/TREAT.htm) was established in 1986 to undertake a 28 school study into student access and systemic funding of textbooks and teacher perceptions of textbooks in Government secondary schools. This research was funded by the Australian Publishers Association. Using University of Sydney research funds, this study was replicated in 20 Private schools. Analysis of results of these two studies (Laws & Horsley, 1992) showed for the first time the impact and processes on pedagogy and teaching and learning of reducing the amount of funding for teaching materials. Because the studies directly compared secondary schools funded at different levels and containing different resources the studies established that teachers deprived of textbooks, set less homework, wasted teaching and learning time in distributing materials and often used inappropriate resources for their classes.

In 1992, TREAT developed a textbook observation schedule instrument (termed TEXTOR) for observing and analysing the interaction between textbook access, teaching and learning, and teachers' use of textbooks in the classroom. The textbook observation schedule was used to show how shortages of textbooks and other teaching materials influenced the way teachers planned and delivered lessons and restricted their teaching and learning strategies (Horsley & Laws, 1993a); how expert teachers used textbooks in their teaching and learning (Horsley, 1994) and how student teachers (pre-service teachers) used textbooks and other teaching and learning materials in the teaching and the role textbooks played in their teacher preparation (Horsley & Laws, 1993b). Further unpublished classroom observation studies using TEXTOR showed that there were major subject differences in the classroom use of textbooks similar to the research of Sosniak and Perlman (1990).

In 1995, the Australian Publishers Association funded a large scale 10 school study into how teachers and schools provided teaching and learning
resources for a new curriculum in junior secondary school (Young & Horsley, 1995). As a result of these studies into the classroom use of textbooks, in 1994, TREAT established a national textbook competition *The Australian Awards for Excellence in Educational Publishing* in partnership with the Australian Publishers Association. The awards have set new benchmarks for the Australian educational publishing industry and have allowed TREAT's research to be disseminated and applied to improve Australian educational publishing.

Since 1995, TREAT has been involved in designing online web based learning environments and has conducted a number of studies and projects in online learning. The focus of this research has been observation in naturalistic settings, observational studies of web based learning environments in schools and classrooms.

In the past five years TREAT has commenced and completed a number of new studies on the classroom use of textbooks and teaching resources. These include studies on:

- Textbook use in online classroom learning environments (reported in this paper).
- Textbook use in completion of students' homework (reported in this paper).
- New observation studies of how teachers resource teaching and learning in their classrooms (reported in this paper).
- TREAT is also conducting three other studies:
  - Two studies on the photocopying behaviour of teachers (what they photocopy and why) for the Copyright Agency in Australia.
  - How teachers use the Internet in the providing resources for their students?

### The Case for Classroom Observation Studies of the Use of Textbooks

In general, very little research on the classroom use of textbooks and other teaching and learning materials has been conducted. Very little research into the use of textbooks has been based on observation of teachers selecting textbooks and teaching materials and using them with their students in their classrooms. Very few studies have explored how students use teaching and learning materials (together or independently) to learn. Such research is very expensive and time consuming. It requires access to schools, teacher and classrooms. Classroom observation research requires research by trained teachers (as well as researchers) who are sensitive to
the ways teachers and classrooms operate and can interpret the behaviour of students and teachers sensitively and analytically.

Unfortunately most research about textbooks is either in the form of surveys of supply and expenditure, sometimes supported with questions about perceptions of textbook use, or is concerned with content and/or style analyses of the textbooks and teaching materials. Occasionally, there are even simulated studies, where teachers demonstrate their possible use of teaching and learning materials in a laboratory style environment. Much of this research is limited. Textbooks and text resources have for many years been studied as if they were inert artefacts. Therefore, very little is known about the specific ways employed by teachers using textbooks and teaching resources with their students. Publishers in particular, though producing for classroom markets and conducting market research have had little access to the real functional use of teaching and learning materials and the meaning made of them by teachers and pupils. The theoretical equivalent of studying textbooks without classroom based research would be researching driving behaviour by analysing cars. For too long textbook analysis has avoided the problematic of classroom use of teaching and learning materials.

Even in relatively less textbook dependent educational systems such as Australia and the UK, there is hard evidence (United Kingdom, Centre for Successful Schools, Keele, 2001; Australia, Horsley & Laws, 1993a, 1993b; Laws & Horsley, 1992, Young & Horsley, 1995) that textbooks are used as a basis for around three-quarters of lessons (Lambert, 1999), and are clearly seen as a vital component of contemporary schooling. Apart from the research of Lambert (1999), little research about textbooks is grounded in the classroom observation of students and teachers practices in their use.

Study 1. Textbook Use in Classroom Online Learning Environments: The Three Pilot Studies

The study of the use of textbooks in online learning environments is an emergent area of research. During 1999–2000, TREAT conducted three pilot studies in three classrooms in three different schools. The focus of the studies were to examine the changing roles of teachers and students as school topics and programs were delivered over the internet via an online web site designed around the schools teaching and learning program. Originally the research had no textbook component. The research was to examine how teachers and students perceived their new teaching and learning roles – as the students used internet programs in regular school
classrooms with the teacher present assisting the students rather than structuring and teaching the lesson subject matter. The research was about the effectiveness of online learning.

Most research and development, and even provision in online ICT learning proceeds in the following way:

- Agencies external to the school develop online learning environments.
- The online learning environments are rich and incorporate advanced instructional design.
- The environments require considerable investment, resources and support.
- The effect of the learning environments on students is examined and researched.

Usually these sites fall into disuse after a short research and marketing interlude, as they are not based around the pedagogic content knowledge of teachers in the school system or the needs of learners (Hall, 2000).

However, in the pilot studies undertaken by TREAT, lessons from actual schools programs, reflecting the schools and teachers pedagogical content knowledge and the appropriate mandated curriculum were developed (see http://www.edfac.usyd.edu.au/staff/horsleytm) into an online learning environment to be offered:

- Within the schools existing technology resources.
- Using the schools existing program.
- With the class teacher present.
- With the class teacher adopting a different teaching role and style.

The schools programs were designed to meet the diverse needs of their students and resource their teaching by procuring new resources and reusing existing resources. Most Internet or online course offerings have not been based on the programs and lessons that teachers teach in their schools. The online learning environment developed and researched was school driven and supported and was designed originally to explore the teachers’ classroom role in detail. The sites were developed by the schools and the researcher using a constructivist approach.

This constructivist approach to the design of instructional materials was based on:

- Learners required to engage with the materials.
- Learners expected to analyse, synthesise, summarise, describe, and solve problems.
- Learners interacting with experts through discussion and chat rooms.
- Learners invited to explore and discover an environment, sometime with guidance.
- Learners expected to build up own hypothesis, categories through study of examples and reflection on own experience.
• Learners moved back and forward between symbolic representation of phenomena and the real life referent.

The Internet seemed a likely and useful tool to construct such learning environments – because they are open ended, interactive and user centred, featuring problem solving, collaboration and the application of skills emphasised in the site design. The site followed the learning site design identified by Sharpe (2000) who describes the design of almost all e-education as involving the provision of the following student activities:
• students select units, read text, follow hyperlinks and complete activities or tests,
• students undertake research using themes or keywords,
• students analyse data and access a range of sites,
• e-mail discussions are initiated and held with external experts, teachers, other students,
• data from various sources is explored and integrated.

The online learning environments were designed to stand alone. A special activities booklet was prepared for the students to complete. This activities booklet was also designed to maintain a record of the students online activity. The sites were not designed to be used in conjunction with other information sources such as textbooks.

However, during the course of the students and teachers use of the web sites and designed learning environments (in the lessons), textbooks and other information sources were used by the students. The students and teachers operated in the ecotone, a boundary between learning environments, between information needs and pedagogy implied in the online learning environment.

Current textbooks reflect the interaction between information and pedagogy. The online learning environment also reflects an interaction between information and (online) pedagogy. At the centre of the online learning environment is a range of activities and tasks that require the students to engage and interact with information presented in the web site. The traditional classroom, teacher structuring of content and textbook use represent one learning environment and the designed web site a vastly different one. For the students and teachers however, the online environment represents an ecotone. The students are used to teacher structuring of lessons and the use of traditional information sources like textbooks. They are used to the familiar mode of learning delivery. New learning environments will be approached by teachers and students, with prior learning based on existing teaching and learning modes.

The designed sites in the pilot studies were based around series of student activities (completed online and in the paper activity booklet) to be completed after student were directed to a range of online information
sources. Textbooks were used in the following ways in these online lessons:

- Students used discussion rooms and chat lines to collaborate and share information, and to interact with experts. In many cases, students were directed to textbooks for supplementary reading and explanations by their online expert partners.
- Students often found online information sources too difficult to read or too long and extensive. In quite a number of online lessons, students used textbooks as information sources, to read explanations of topics and concepts that they found it difficult to understand using online sources.
- In some of the online lessons, students used the worked examples, or sample problems and tasks in textbooks to guide them and assist them in completing on-line tasks.
- The perceptions of the students and teachers about online learning included:
  - Entire units should not be based on using the Internet and other teaching methodologies need to be incorporated. For example, Internet work could be set as a project or homework to increase the amount of teacher to student interaction in the classroom.
  - In online environments learning was very task oriented. Some students did not find the Internet a useful learning tool but most students found the Internet a fun, different and useful learning tool.
  - On-line learning reduced the amount of student/teacher interaction. Students asked more questions relating to the task rather than the subject matter. For teachers, online learning environments are similar to appearing in a quiz show; they are bombarded by questions from students who are completing different tasks at one time. Teachers lose a sense students' progress, as a result learning on-line needs to be combined with other teaching and learning methodologies.

Two textbook use effects were identified in the pilot research, the glossary effect and the explanation effect. For many students, reading online sources presents a number of difficulties; major difficulties being the presence of unfamiliar terms and vocabulary and the advanced level of the texts. Online sources of information assume that students can read them at an independent level. For students needing to extract and process information from online sources, glossaries and simple descriptions of important concepts are necessary. Textbooks were used basically as a glossary. Since many students were unable to read online sources at even an instructional level, textbooks were used for their definitions and explanations to assist reading at a guided level. The designed sites had access to glossary mate-
rial but textbook material is more likely to be aimed at the level of the students and provide support at the level of guided reading.

Students had no way to see the size of a chunk of information “we click forever” is a common response by students in evaluating online learning environments. Textbooks easily provide the size of the chunk, the iron law of web learning is the need for speed, the number of clicks can not give a student the size of the information chunk required.

One of the advantages of online learning environments is the ability to use discussion and chat rooms to link students with other students and teachers, to develop the shared understandings at the core of learning. The communication lane of the Internet can link subject experts and teachers to students, whose own questions can form the basis of communication and discussion. In the discussion boards and chat rooms of the pilot studies, traditional textbooks were used as sources of support explanations by teachers and experts alerting students to sources of information. Everything may be on the web, it may be instantly available, it may be prepared by subject experts, it may contain different representation and points of view, but not in the form that students can understand. Textbooks were used as information sources for explanation, that could be found comfortably and confidently. There is little way that students can inspect the quantity and depth of information on the Internet on any given topic, question or concept. Developing a non-expert overall conception of the size, relevance and depth of knowledge required is provided much more easily through the pedagogic design of textbooks.

Both of these uses of textbooks were unanticipated and unexpected in the pilot studies.

Study 2. Textbooks Use in Homework: The worldschool.com Homework Study

worldschool.com commenced operation as a homework study site in 1999 and listed on the stock exchange in 2000 in Australia. worldschool.com undertook a number of homework studies during its development phase. In one study undertaken by TREAT, teachers in five schools were asked to set two homework tasks. Prior to the completion of each task, a questionnaire was administered to the students to measure their perception of the task (how long will it take, what resources do you think you will use, who do you think will help you etc). After the homework task was completed students were administered the same questionnaire measuring their actual completion of the task (how long it did it take?, what resources did you use?, who did help you?). This procedure was repeated for two different home-
work tasks. For the second homework task, the students were able to use the worldschool.com site to assist in completing the homework task.

The study examined:

- the times students perceived and then took to complete homework task 1 and then task 2,
- the sessions and chunks that student perceived and then took to complete homework task 1 and then task 2,
- the location that the students perceived and then completed the homework tasks in,
- the information students perceived they would use and then used in homework task completion,
- the assistance students perceived they would receive and then received in homework task completion,
- the student perception of their performance in the homework tasks and their actual performance,
- the actual homework of the students was collected and analysed and discussed with students, researchers observing a number of students completing the homework tasks.

The worldschool.com study made many startling findings in relation to homework.

One of the most important findings reflected student perceptions about the resources that they perceived they would use to complete homework tasks 1 and 2 and actual sources they used.

Students tended to overestimate the use of reference books and encyclopedias as information sources in the completion of both homework tasks. They tended to slightly underestimate the use of school textbooks for task 1 and also underestimate the use of “other resources” that may have been specially used to complete this specific homework task. A significant variation in the results was that 41% (task 1) and 52% (task 2) of students expected to use the resources of the internet such as worldschool.com to complete their homework. However, much smaller proportions (25% task 1 and 19% task 2) actually did so.

As well, unlike other aspects of homework (time of completion, performance on tasks etc) students reported on in the worldschool study there is a large and clear mismatch between the help students expected to receive in completing their homework and the actual assistance they received. Student expected that they would receive help with homework from a variety of sources but rarely received it. These results are startling in the context, the context of the provision of a professional homework study site based on providing students with homework help (the world-
schoolsite anticipated student homework and study questions and designed carefully constructed assistance with the anticipated tasks).

These results reflect the ecotone, the boundary between two learning environments, concept. When asked why they hadn’t used the web site to assist with homework students offered comments such as:

- “the writing in the web site was too hard”,
- “needed teacher to explain the concepts, and how to answer the question”,
- “prefer discussion of the problem than using the computer”,
- “it was difficult to learn from the internet for many reasons”,
- “the library sucks – it doesn’t have enough machines”,
- “not used to doing homework like this”,
- “we were supposed to look at a site to answer but the site had changed so we couldn’t do the questions”,
- “I printed out the site but then it didn’t answer the question”,
- “why can’t we use chat”.

Students in the worldschool.com still used the worldschool.com site, but used textbooks more than had been anticipated by the study. In the pilot studies in online learning environments, textbooks were used mainly as a glossary and as a source of explanation and information. In the homework study, students used the textbook as a source of worked examples and solutions to problems. These results have lead TREAT researchers:

- to re-examine the role of information needs in teaching and learning,
- to question forecasts that “textbooks will disappear into the internet trash compactor”;
- to question predictions about new paradigms of learning and
- to develop new theoretical conceptualisations about changes in learning conditions.

The role of information in teaching and learning

Sure the Web talks a good game with its sound and video and animation and god awful 3-D interfaces. But lurking beneath all those various bells and whistles is good ol’ text. It doesn’t have the sinus blowing sex appeal of Flash, Shockwave or MP3, but text is the stalwart backbone of Web based content. It rolls up its sleeves and gets the real work done.

It is believed that online learning environments can overcome currency of information problems, as the technology allows refreshed, correct information to be easily displayed.
However, currency is but one aspect of information needed in teaching and learning.

Availability, relevance, accessibility, and the size and amount of information are crucial pedagogic dimensions of information that textbooks have been very efficient and useful in addressing, in assisting teachers with their pedagogical content knowledge. These were the information needs supported by textbooks in the pilot studies.

Gerhard and Wiktorin (2000) argue that the web delivered learning makes another type of information use possible. Through interactive media, the user is able to communicate according to his own interests and rules. The medium through which communication takes place – the reacting, programmed computer – plays an active role, (Turkle, 1998, 35 f). Both aspects are combined with a third component, discursive information (see Rotzer, 1998). This means that virtual information is constantly changing permanently or is even being produced at that moment due to the discourse of the interacting users. Good examples for such a discourse are newsgroups, interactive homepages, mailing lists and others. This shows that interactivity is the main characteristic of virtuality, or in other words, interaction is the precondition for virtual pictures: “In order to see some picture in the mirror, there has to be something in front of it” (Esposito, 1998, p. 149). Therefore, users themselves generate information through their work on the computer. This discursive use of information occurred regularly in the pilot studies in the tree classrooms as students used the interactive power of web delivery and design to pursue discursive information.

However, these two studies showed that students used different information sources to support different information needs. While the Internet provides discursive and current information sources, it is less useful in providing the amount, chunk and size of information that students need. Textbooks still play this role well, because they use pedagogical content knowledge that is based on experience of providing the information that students need to learn.

It may be tempting to imagine that technology, especially the internet, is revolutionising teaching and learning, changing teaching practice and student learning, and allowing students to improve their learning outcomes. These views are often expressed in the table below which argues that textbooks belong to the old paradigm of learning and the Internet to the new paradigm.
<table>
<thead>
<tr>
<th>Traditional Approaches to Instruction</th>
<th>The New Paradigm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teacher-directed</td>
<td>Learner-centred</td>
</tr>
<tr>
<td>Didactic teaching</td>
<td>Student exploration</td>
</tr>
<tr>
<td>Short blocks of instruction on a single subject</td>
<td>Extended blocks of multidisciplinary instruction</td>
</tr>
<tr>
<td>Passive or one-way modes of instruction</td>
<td>Active and interactive modes of instruction</td>
</tr>
<tr>
<td>Individual, competitive work</td>
<td>Collaborative, co-operative work</td>
</tr>
<tr>
<td>Teacher as a knowledge dispenser</td>
<td>Teachers as a facilitator or guide</td>
</tr>
<tr>
<td>Ability grouping</td>
<td>Heterogeneous grouping</td>
</tr>
<tr>
<td>Assessment of knowledge, specific skills</td>
<td>Performance-based assessment</td>
</tr>
</tbody>
</table>

Biologists use the term “ecotone” to describe an area where two adjacent ecosystems overlap – for example where a forest gradually turns into a grassland. The ecotone has an ecology of its own. It can support forms of life not found in either of the adjacent systems. Today there exists the educational equivalent of an ecotone between traditional learning environments and the emergence of new learning environments designed around student centred interaction with the Internet and technology based learning tools. Both the traditional approaches and new paradigm approaches are going to exist together in the same classroom and school. Changes in the educational environment are going to occur through an ecotone, new technologies are not going to erase the past but build on them.

Many studies of computer use in schools and classrooms confirm these patterns, some subjects in a secondary school will use technology more successfully and frequently than others – and the same difference will persist across school systems as well. Many studies tend to divide schools into technology rich or regular schools, or technology advanced and non-technology schools. Despite the huge amounts spent by governments and communities in equipping schools with technology, changes have been gradual and spasmodic, reflecting a ragged borderline of adoption, use and implementation. Schools often offer both learning environments – sometimes even within the same classroom.

Textbooks continually evolve and change to meet new conditions and information needs in evolving classrooms. Textbooks of the future will exist; the old economy still lives. Textbooks contain the pedagogical content knowledge that is needed by learners to construct meaning. Textbooks will have a role in online classrooms, a new role to meet the new informa-
tion needs of teachers and learners – new textbooks for the new millen-
nium.

Study 3. Homage to the Handout: A new study on access to
teaching and learning materials

In 2000, a new classroom observation study was conducted to explore the
way that teachers pedagogical content knowledge was shaped and how this
pedagogical content knowledge shaped their use of teaching and learning
materials. Following Shulman (1986), it is now widely accepted that
teachers develop “pedagogical content knowledge”. This is the specialised
professional knowledge that teachers use to interpret the students prior
learning, the concepts that students will find difficult, the most appropriate
teaching strategies and the resources most useful in teaching. Pedagogical
content knowledge arises from the teachers need to represent and teach
their subject to children. It consists of three main components: knowledge
of the subject matter, knowledge about students and their characteristics,
and thirdly, knowledge of the school, community and classroom contexts
in which the learning takes place. Pedagogical content knowledge inevita-
ibly embodies, invokes and focuses on “those aspects of the subject that are
most germane to its teachability” (Shulman, 1986).

This knowledge includes the most regularly taught topics, the most useful
forms of representation, most successful analogies, demonstrations,
examples and illustrations, and the ways of making the subject familiar
and understandable to others (that is, the students). Thus, pedagogical
content knowledge can be learned and is often passed on within a profes-
sional community such as that which exists in a school subject department.
Though teaching can appear to be highly individualised therefore, the
strength of the school or departmental culture can be so powerful that pro-
fessional knowledge is sometimes shaped significantly by received wis-
dom and observed practice. New teachers often feel most comfortable
teaching what has been taught before, using “authorised” methods. This
has implications for how we understand the role of the textbook and the
use of teaching and learning materials. It is not surprising, therefore, that
some studies have shown that teachers lesson and program planning is
heavily dependent on the resources they have to hand and choose to use.
For some teachers, both novices and their more experienced mentors, the
textbook is the curriculum, or at least it delimits the essential subject mat-
ter.

Alverman (1987) observed science teachers and how they used text-
books in discussions. Hinchman (1987) observed textbook use by three
teachers through observation and interviews. She concluded that teachers
exhibited three different types of textbook use: methodological coverage, textbooks as an information source, and reference use in higher level class discussions. Lambert’s (1999) work resulted in a different — though clearly related — threefold division of the ways textbooks are used by teachers: as coursebooks structuring the "scheme of work" ("coverage"), as a means of motivating or stimulating learning (more than merely a source of information) and as a teacher support (acknowledgement that textbooks can play a part in effective classroom management and organisation).

This classroom observational study sought to explore why the teachers chose the teaching and learning resources that they prepared for their lessons and their use of textbooks for lesson and program preparation.

Results

10 lessons of seven newly qualified teachers (from two schools and teaching eight different subjects in secondary school) within the first three months of commencing their teaching careers were observed. The purpose of the observation was to identify how these teachers resourced their teaching and learning. In this context, resourcing refers to the information sources and reading material the teacher planned to use in the lesson and was provided to their students. In this context, resourcing also means the source of classroom tasks and activities, and any other teaching and learning resources that were to be used in the lesson by teacher and students. Earlier studies conducted by TREAT used a textbook observation schedule termed TEXTOR to explore how teachers and students use textbooks and teaching resources in the classroom. The original TEXTOR schedule sought to identify:

- the details and condition of the materials being used (a),
- the length of time taken to issue and collect texts (b),
- how the student gained access to texts (c),
- the length of time texts were used in teaching and learning (d),
- whether pre-reading or activation and assessment of prior learning took place (e),
- how did students read the text (f),
- what tasks were set by the teacher (g),
- were the texts to be used for homework (h),
- how did the students use the text in the classroom (i),
- what was the teachers purpose for using the texts in class (j).

In this study, only items a, c and j were observed and analysed in two schools over a one week period in the 10 lessons.
In the 10 lessons observed the 7 teachers handed out photocopied sheets (handouts) in 8 (80%) of the lessons. In two of the lessons overhead projections of the handouts by the teacher accompanied student use of the photocopied handouts. The 7 teachers handed out 532 photocopied pages in the lessons observed. Since the 10 lessons contained 207 students, teachers hand out approximately 2.5 pages per student per lesson. This figure of 2.5 photocopied pages per lesson correlates with two other TREAT studies on photocopying handouts in lessons. Horsley (1994) in a study of an expert teachers use of textbooks concluded that expert teachers tended to hand out specially prepared photocopied lesson notes and activities (2.5 pages per students per lesson). A yet to be published 2001 TREAT study on how final year student teachers resourced their teaching and learning in their classrooms also calculated a 2.5 pages per student per lesson figure. In one of the lessons where no photocopied handouts were used the teacher used textbooks from the book room to resource teaching and learning. In only one of the lessons observed were paper resources not employed – in these lessons students completed a role-play in a drama lesson.

Use of Photocopied texts

In 3 (30%) of the lessons observed, teachers used photocopied textbooks. The textbooks were either not available due to funding constraints (1 lesson), or were compilations from different texts. In one lesson information from an old text was updated and added to and the photocopied handouts reflected multiple texts. In these three lessons, the teachers and students used the materials as both sources of information and as sources for class activities and problems. Typically, these lessons proceeded with the teacher introducing and previewing the material to be covered with the students. Students then read the material silently or aloud around the classroom. Discussion ensued to highlight key concepts, discuss important ideas and then students completed tasks set out in the materials. When asked why they choose and prepared these teaching resources teachers indicated that they “sought to provide the appropriate information and activities for the curriculum and its outcomes and the students age and stage level, their abilities and interests.”
Teacher Prepared Sheets and Handouts

In five of the lessons observed, lessons were resourced by teachers who prepared their own teachers notes and handouts for their students. These notes can be categorised into a number of distinctive types.

1. **Tasks and activities.** In one of the lessons observed, the teacher produced a photocopied sheet of tasks and activities for the students in her class. Students had access to textbooks and information sources but the teacher regarded the tasks and activities in the textbook as too difficult and as not meeting the learning needs of her students. So new tasks and activities were produced and distributed; these activities have a greater literacy focus than those available in the textbook available.

2. **Teacher prepared text.** In two of the lessons, teachers prepared their own text based on their research of the topic to be copied with their class. In both cases, schools had not purchased new textbooks for the students and the teachers were not prepared to use old textbooks with old information. In both cases, the student used new textbooks and Internet sources to construct teaching notes with activities for the students and the lesson. These were photocopied and distributed to each individual student.

3. **Illustrative material.** In this lesson, the teacher compiled and produced a collage of illustrative material for the students. These types of illustrative material have been observed in many lessons mostly in Art and History. Teachers photocopy a range of source documents or artworks produce a mini anthology and use in this in their explanations of principles and processes that they wish to highlight and reinforce for their students. Many of these illustrative collages are compiled and prepared by gaining access to multiple information sources such as the full range of textbooks on the topic supplemented by other reference material, sometimes even form the teachers prior university subject study. One study of expert teachers use of textbooks showed that expert teachers often resource their teaching and learning in this way.

Conclusions

This study confirms the suggestion that teachers use textbooks to support their professional needs and shape their pedagogical content knowledge. Again, this happens in different ways depending on whether the need is to provide informational or instructional resources for learning, sources of student activities and tasks, or whether there is a pressing need to find ways of occupying (“engaging”) the pupils. This study confirms that Australian teachers use multiple information sources to prepare their lessons and programs. These multiple sources of information are designed to meet
the learning needs of their students. These learning needs are interpreted using the teachers pedagogical content knowledge and experiences in representing the subject to the students. In many cases, textbooks are a source of this pedagogical content knowledge as well.

This study also confirms some of the conclusions of Horsley and Lambert (2001) in their review of classroom observational research on the use of textbooks:

- The use of textbooks and other publications for school students is undergoing rapid change;
- Textbooks are increasingly pedagogic explorations of information;
- Multiple texts and resources now inform much, if not all, teaching and learning;
- Teachers and schools frequently make their own “textbooks”;
- Funding has a critical impact on the use of materials in schools;
- Different teachers use textbooks and teaching resources in different ways.

Rapid changes in curriculum, development of new theoretical understanding of learning and applications of new technologies are leading to new possibilities of using teaching and learning resources in the classroom by teachers and students. Teachers can identify and create appropriate teaching and learning resources to meet curriculum specifications in ways that meet the individual learning needs (in terms of learning style, interests and motivation) of their students. Teachers take a mixed approach, often starting with an Internet search, scanning through the available textbooks on the market and increasingly customise teaching and learning resources. Textbooks inform teaching and learning and still have a place but in different ways than in the past. This trend is accelerating rapidly and needs to be understood more fully.

Developments in the study of learning (leading to “constructivist” views of learning), require that resources are used to make meaning. The constructivist classroom is less subject or teacher centred and does not depend on a single information source. Current views of learning emphasise the creation of shared understandings, cognitive scaffolding, guided construction of knowledge and building on prior knowledge. As with other elements of the whole “educational environment”, the evolving textbook reflects, reinforces and guides these trends. Teachers increasingly reflect these views of learning as they prepare teaching and learning materials for their lessons. It is for these reasons and reasons of shortage of funding that teachers now make their own textbooks basically out of compilations and adaptations of parts of others to meet the learning needs of their students. Teachers develop a resources space to provide the appropriate teaching and learning opportunities for their students. This resource space includes
the schools' purchases of new textbooks and materials held in school and community libraries. It includes the use of existing school textbooks, kits and packages produced by publishers, old materials stored in the school and perhaps those produced by departments of education, subject associations and curriculum authorities, special interest groups and non-government organisations (NGOs).

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ABSTRACT

Although textbook researchers have coined the phrase ‘textbook pedagogy,’ this notion has yet to be fully explicated and explored. The term may, however, be considered to refer to such factors as the ways that teachers use texts in the classroom, access to texts which creates a context for their use, as well as to text features and characteristics that may improve or constrain learning. This paper attempts to explicate notions of textbook pedagogy through a sociocultural analysis of the mediated use of textbooks by teachers. A socio-cultural approach to learning, based on the work of Rogoff (1998), provides a way of theorizing this mediated use of texts. Rogoff’s cultural practice model considers learning to involve enculturation into the practices of particular communities. From the perspective of a textbook pedagogy, textbooks play a central role in the enculturation of students into the tenents, knowledge and practices of the various academic disciplines.

The sociocultural analysis of textbooks and their use can therefore be considered through examination of contextual factors and text characteristics. Contextual factors involve exploration of the way teachers mediate the use of textbooks in teaching and learning through processes of scaffolding and the creation of zones of proximal development.

Textual characteristics also influence the ways teachers enculturate students into academic disciplinary practices through scaffolded textbook use involving the creation of intersubjectivity and ZPDs. Additionally however, textual characteristics may afford or constrain student learning.
This paper attempts to explicate the notion of a textbook pedagogy through a sociocultural analysis of data obtained from previous and new textbook research (Horsley, 2001; Young and Horsley, 1995; and Lambert, 2002).

Textbook pedagogy

“Textbook pedagogy” is a term first used by Lambert (2002) in his discussion of research on the classroom use of textbooks and teaching and learning materials. Textbook pedagogy refers to the ways that teachers mediate the role of artifacts like textbooks, worksheets and teaching and learning materials through their use in teaching. The idea of textbook pedagogy has arisen through new research (Horsley and Lambert 2001; Lambert, 2002) on the classroom use of teaching and learning materials.

Most research about textbooks is either in the form of surveys of supply and expenditure, sometimes supported with questions about perceptions of textbook use, or is concerned with content and/or style analyses of the textbooks and teaching materials (Horsley, 2001; Horsley and Lambert, 2001). Simulated studies, where teachers demonstrate their possible use of teaching and learning materials in a laboratory style environment (Zahorik, 1990) are also limited. Textbooks and text resources, have for many years been studied as if they were inert artifacts. The major research focus in textbook research (and in the literature) is content analysis, where inferences have been made about textbook uses and effects, through research on the content of the material in texts. Such an approach has been likened to “learning about driving behaviour by studying cars” (Horsley, 2001). As a result, little is known about the specific ways employed by teachers using textbooks and teaching resources with their students. It is known that this use is heavily influenced by the culture of the school, and the culture of the classroom, and the organisational structures (i.e departments) in which the teachers work (Lambert, 2002). Publishers in particular, though producing for classroom markets and conducting market research, have had little access to the real functional in class use of teaching and learning materials and the meaning made of them by teachers and pupils.

In the research literature on textbooks and teaching and learning materials very little research on the classroom use of textbooks and other teaching and learning materials has been conducted (Horsley and Lambert, 2001). Very little research into the use of textbooks has been based on observation of teachers selecting textbooks and teaching materials and using them with their students in their classrooms. Very few studies have explored how students use teaching and learning materials (together or independently) to learn. Despite the fact that much teaching and learning material used in classrooms is photocopied (Horsley, 2002) little research has been undertaken to analyse how teachers select, copy and use such materials in their teaching, and what influences their choices in approaching developing teaching and learning materials. In particular, observation research requires researchers who are sensitive to the ways teachers
and classrooms operate and can interpret the behaviour of students and teachers sensitively and analytically.

This paper will apply sociocultural perspectives to the way that teachers resource their teaching and learning. In doing so, it will conceptualise more fully the role that teacher mediation plays in the use of textbooks and teaching and learning materials.

Such research may help clarify how the mediated role of textbooks, within learning environments, support learning. This analysis will use existing and new classroom research on the use of textbooks and teaching materials undertaken by the Teaching Resources and Textbook Research Unit (TREAT) at the University of Sydney, and by University of London Institute of Education. This research has identified a number of crucial results from classroom based observation. The idea of textbook pedagogy has arisen from this research into the way textbooks are used in teaching and learning, in particular:

- in what ways does textbook provision and mediation- in both qualitative and quantitative terms - impact on teaching and learning?
- in what ways do the characteristics of the teacher-text-student interface - that is, the nature of classroom dynamics in relation to the textbooks and the way they are used impact on teaching and learning?

This paper will also report on recent research into the photocopying behaviour of teachers, undertaken using data from classroom observation studies and examinations of school copying records collected by Australia’s Copyright Agency Limited.

**Textbook pedagogy and pedagogical knowledge**

Following Shulman (1987), it is now widely accepted that teachers develop ‘pedagogical content knowledge’. This is the specialised professional knowledge that teachers use to interpret the students prior learning, the concepts that students will find difficult, the most appropriate teaching strategies and the resources most useful in teaching. Pedagogical content knowledge arises from the teachers need to represent and teach their subject to children. It consists of three main components: knowledge of the subject matter, knowledge about students and their characteristics and thirdly, knowledge of the school, community and classroom contexts in which the learning takes place. Pedagogical content knowledge inevitably embodies, invokes and focuses on ‘those aspects of the subject that are most germain to its teachability’ (Shulman 1987). This knowledge includes the most regularly taught topics, the most useful forms of representation, most successful analogies, demonstrations, examples and illustrations, and the ways of making the subject familiar and understandable to others (that is, the students). Thus, pedagogical content knowledge can be learned and is often passed on within a
professional community such as that which exists in a school subject department. Though teaching can appear to be highly individualised therefore, the strength of the school or departmental culture can be so powerful that (in our view) professional knowledge is sometimes shaped significantly by received wisdom and observed practice. New teachers often feel most comfortable teaching what has been taught before, using ‘authorised’ methods. An important aspect of pedagogical content knowledge is that it is a representation of the subject discipline culture of the classroom. Teachers develop varied pedagogical content knowledge and use teaching resources in varied ways. Teachers seem to differ significantly in the value they place on their own disciplinary knowledge in shaping their pedagogic knowledge. As a result, some studies have shown that teacher lesson and program planning is heavily dependent on the resources they have to hand and choose to use. For some teachers, both novices and their more experienced mentors, the textbook is the representation of the subject – even if texts are not used directly in the classroom, as the study of photocopying will show – textbooks and teaching materials delimit the essential subject matter.

Alverman (1987) observed science teachers and how they used textbooks in discussions. Hinchman (1987) observed textbook use by three teachers through observation and interviews. She concluded that teachers exhibited three different types of textbook use; methodological coverage, textbooks as an information source, and reference use in higher level class discussions. Lambert’s (1999) work resulted in a different – though clearly related - threefold division of the ways textbooks are used by teachers: as coursebooks structuring the ‘scheme of work’ (‘coverage’), as a means of motivating or stimulating learning (more than merely a source of information) and as a teacher support (acknowledgement that textbooks can play a part in effective classroom management and organisation). Some recent work by Horsley (2001) confirms the suggestion that teachers use textbooks to support their professional needs and inform and shape their pedagogical content knowledge. Again, this happens in different ways depending on whether the need is to provide informational or instructional resources for learning, sources of student activities and tasks, or whether there is a pressing need to find ways of occupying (‘engaging’) the pupils. These issues are taken up in the research discussed later in the paper.

Given their importance it would be expected that the role and function of textbooks in teacher education and classroom learning would be significantly researched. However, there is a surprising lack of attention paid by teacher educators and trainers to how novice teachers are inducted into the use of textbooks, and their wider role in interpreting the curriculum and shaping pedagogy. The triangular relationship between pupil-teacher-text/teaching and learning materials is not really featured during teacher training. Though there is significant research on the (Chalmbers and Calfee, 2000) optimal design of school textbooks, identifying comprehensibility, curriculum and instruction as their basic template for analysis, they do not link this to wider questions of teaching and learning – for example the design of lessons. However, they stop short of theorizing ‘textbook pedagogy.’ Such a textbook pedagogy would indicate how, for example, may teachers
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use textbooks more ‘effectively’ with pupils? To what extent is ‘effective’ use dependent on the design of the textbook, the supply or availability of textbooks or the quantity or quality of teacher preparation, or other factors related to the mediated use of texts and teaching materials.

Studies of teacher perceptions about textbooks (Horsley and Laws, 1993, for example) show wide variations in teacher beliefs about the value and use of textbooks. Student perceptions show more uniformity about the value and importance of textbooks. The History and Youth study, conducted in Europe, (Von Borries, 1999) which surveyed over 30,000 students in different countries about their history textbooks, showed that student and teachers’ perceptions are at odds, students having a much more positive perception about the truthfulness, breadth and value of their textbooks than their teachers.

Sociocultural theory/theories

Sociocultural theories in education have their origins in the work of Vygotsky and his colleagues. Sociocultural theories emphasise the social nature of learning and thinking, the embeddedness of learning and thinking in social, cultural and historical contexts, as well as the distribution of learning and thinking across other persons, resources and artifacts. Sociocultural researchers concerned with school learning have explored student learning in collaborative contexts (Rogoff, 1998) and in classroom communities of learners (for instance, Brown, 1997). Socio-cultural theory and research provides an important body of knowledge for textbook researchers to use to analyse classroom based observations and mediated use of teaching and learning resources and artifacts.

There has been considerable recognition of the importance of sociocultural perspectives for understanding student learning in schools. While there are many sociocultural theories which derive from the initial work of the Russian psychologist Lev Vygotsky (for instance Rogoff, 1998; Greeno & The Middle-School Mathematics Through Applications Project Group, 1998; Engestrom, 1987), all share the following assumptions (John-Steiner & Mann, 1996): learning and cognitive development are considered to be fundamentally social and to have their origins in social processes; language and other symbol systems are considered to play a central role in learning and cognitive development; learning and cognitive development need to be considered in the historical context of the individual’s own activities, as well as those of the community and culture more generally. Although sharing these common assumptions, some sociocultural researchers have emphasised the view that learning and cognitive development involve participation in, and enculturation into, the cultural practices of various communities (Rogoff, 1998), while others have focussed their attention on the aspects of the environment (Greeno & The Middle-School Mathematics Through Applications Project Group, 1998) that can facilitate or support learning and cognitive development, or alternatively constrain or limit these processes. Yet other researchers have developed sociocultural
understanding of the activity systems (Engestrom, 1987) within which human beings learn, work, and otherwise conduct their affairs.

A central notion in the sociocultural approach which links learning and cognitive development, and which has therefore been of significance to educators, is that of the Zone of Proximal Development (ZPD). This notion is also important in that it provides a sociocultural explanation of the way in which processes which exist at a social level are transformed so that they become individual processes and attributes. The zone of proximal development has been defined (Vygotsky, 1978) as “the distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers” (p. 86). Vygotsky and subsequent sociocultural theorists consider that it is through the creation of zones of proximal development that learners become able to successfully engage in activities, with the assistance of more capable others, that they are unable to complete successfully by themselves. The cognitive scaffolding provided by more capable others when zones of proximal development are created allows learners to internalise or appropriate higher order thinking skills, such as problem solving and self-regulation.

For textbook researchers, the process of the internalising of thinking in the zone of proximal development is assisted by the mediating role played by cultural artifacts and tools. These tools which may range in scope from symbol systems such as reading and writing, to the use of textbooks and computer programs (Wiley, 2003). Textbooks, worksheets and teaching and learning materials are cultural artifacts and tools that may provide scaffolding and cognitive structuring for learners as they engage in activities for which they are developing competence and skill. In effective teaching such tools and artifacts are mediated in their use in the zone of proximal development by more capable others, such as teachers and other students, who scaffold the appropriate use of the materials in learning.

It is in the Zone of Proximal Development that learning occurs, according to Vygotsky (1978), and it is in this zone that learning contributes to, and leads development. This is in contrast to what Vygotsky referred to as the Zone of Actual Development (ZAD). The Zone of Actual Development refers to what students can do alone and unassisted. When skills learned in the Zone of Proximal Development have been fully mastered they become part of the Zone of Actual Development and no longer contribute to development. Therefore, when teachers assign tasks and students are able to complete them without assistance, the tasks are within the students’ Zone of Actual Development and the skills required have already been mastered. From the perspective of textbooks, when students use textbooks in the absence of mediation by the teacher, or other students, they are operating in the Zone of Actual Development.

Two major sociocultural theories will be used in this paper to further develop the notion of textbook pedagogy and the mediated use of textbooks by teachers: the cultural practice
approach of Rogoff (1998, 1994) and colleagues (Rogoff, Matusov & White, 1996) and the
extension to the zone of proximal development by Valsiner (1987; 1997). Although these
two theoretical approaches are quite distinct, key notions from both theories can profitably
be applied to the understanding of the mediated use of textbooks by teachers.

The cultural practice approach (Rogoff, 1998; 1994), has extended upon Vygotsky’s initial
ideas concerning the zone of proximal development through understanding of the way in
which individuals become established members of a community of practice. The term
‘community of practice’ refers to a sociocultural group that collaborates to achieve shared
goals through particular practices and activities. Although these practices might vary
considerably between different communities, such as the practices of various professional
communities and those of lifestyle communities like surfers and motorcyclists, they are highly
valued by their members and they provide the context (Miller & Goodnow, 1995) in which
human learning and development takes place. The members of such communities vary greatly
in their mastery of community practices, however the community provides the context in
which the more established members assist the less established in their mastery of community
practices through joint involvement and collaboration. As individuals are enculturated into
the practices of a community their identity undergoes change (Rogoff, 1998) and they may
likewise contribute to change in community practices. Schools and the classrooms within
them constitute a particular kind of community of practice, often called a community of
learners (Brown & Campione, 1994). In these communities of practice students are enculturated
into academic practices in general, as well as the practices of specific academic
disciplines. Textbooks and teaching and learning materials play an important role in these
enculturation processes. They also provide the basis for much teacher-student interaction
and collaborative student activity in the culture of the classroom.

The notion of the zone of proximal development has also been reconstructed and extended
in the work of Valsiner (1987; 1997) and applied by other researchers (for example, Pressick-
Kilborn and Walker, 2002). While Valsiner (1997) uses the notion of the Zone of Proximal
Development, the concept is reconstructed with the aim of relating it to two new zones of
learning and development: the Zone of Free Movement (ZFM) and the Zone of Promoted
Action (ZPA). Essentially these two new zones are concerned with the constraints and
affordances for learning and development which operate in the present moment. The Zone
of Free Movement (ZFM) notion explains the impact of constraints or limitations on learning
and development while the Zone of Promoted Action explains the promotion of learning and
development. All three zones are considered by Valsiner to be socially constructed and all are
interlinked, however, the two new zones are concerned with the present moment while the
zone of proximal development is concerned with near future possibilities. Thus, the promotion
of learning in the Zone of Promoted Action (ZPA) and the constraints on learning posed in the
Zone of Free Movement (ZFM), provide the possibilities for learning and action which become
actualized in the zone of proximal development.
From the perspectives of textbooks and their use by teachers, Valsiner’s system of zones provides a way of considering the affordances or benefits of texts as well as their limitations or constraints. Textbooks can therefore be considered as tools which both promote and constrain learning and which provide important possibilities for learning in the zone of proximal development. As will be shown later in the paper teachers can use texts in ways which promote (or constrain) learning, and there are aspects of textbook design and presentation which impact on the mediated use of texts by teachers. The use of the textbook by the teacher, or textbook pedagogy, determines the extent to which learning from text is promoted or constrained.

**Textbook pedagogy: A sociocultural analysis**

In the preceding section it has been argued that textbooks are important cultural tools which mediate student learning. Using the sociocultural theories of Rogoff (1998; 1994) and Valsiner (1987; 1997) it has been argued that textbooks play an important role in enculturating students into academic and disciplinary communities of practice and that the way that teachers use textbooks in their classrooms can promote or constrain learning. The mediated use of texts by teachers in turn provides the scaffolding for learning in the zone of proximal development.

In this section of the paper sociocultural theories are applied to the analysis of the notion of textbook pedagogy. Two main lines of analysis are presented: firstly it is argued that changing conceptions of the nature and role of textbooks are very much in accord with a sociocultural perspective on textbooks, and secondly the mediated use of textbooks by teachers is further considered for the perspective of sociocultural theory. This analysis is conducted through two empirical studies: an analysis of teacher photocopying behaviour and an analysis of Copyright Agency Limited (CAL) school photocopying records.

In relation to the first line of analysis, textbooks, once seen as vehicles for transmitting knowledge, are from this perspective seen in a very different light. Whereas previously they provided information and congruent activities, nowadays textbooks are increasingly conceptualised as providing opportunities for students to construct understanding in interaction with complex multi-modal knowledge sources. Textbooks are also, as indicated in the first sections of the paper, increasingly considered representations of the ways of learning in discipline areas. As such they enculturate learners into these disciplinary areas and into the practices of the discipline. Additionally their increased pedagogical complexity allows them to be used for the joint construction of meaning in collaborative activity, rather than as the basis for individual learning.
This new conception of textbooks is contrasted with the traditional conception in the Table 1.

**TABLE 1 Changing conceptions of textbooks**

<table>
<thead>
<tr>
<th>Roles</th>
<th>Transmission</th>
<th>Constructivist</th>
<th>Sociocultural</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student</td>
<td>Passive recipient of information provided in teaching and learning materials and by teacher.</td>
<td>Active agent in inquiry activities.</td>
<td>Uses text in collaboration with other students. Engages in authentic activities of disciplinary communities.</td>
</tr>
<tr>
<td>Teacher</td>
<td>Authority in knowledge domain. Dissemination of appropriate knowledge.</td>
<td>Creates environments for active learning and inquiry.</td>
<td>Collaborative participant in enculturation process. Uses text to create intersubjectivity, establish common student goals. Identifies and utilises texts to create ZPD for students. Uses materials to enculturate students into key disciplinary understandings.</td>
</tr>
</tbody>
</table>
In relation to the second line of analysis, theoretical concepts from sociocultural theory in general as well as the work of Rogoff and Valsiner, previously outlined, are used to examine how teachers use textbooks in their teaching. Sociocultural notions like the ZPD, ZPA and ZFM are used to provide an understanding of the extent to which the mediated use of textbooks by teachers is likely to lead to learning and development.

We turn now to a consideration of the mediated use of textbooks by teachers as exemplified in two empirical studies:

**STUDY 1**

**Pilot Observation Study of Teacher Photocopying Behaviour**

10 lessons of seven newly qualified teachers within the first three months of commencing their teaching careers were observed. The purpose of the observation was to identify how these teachers resourced their teaching and learning. In this context resourcing refers to the knowledge sources and printed teaching material the teacher planned to use in the lesson and was provided to their students. In this context resourcing also means the source of classroom tasks and activities, and any other teaching and learning resources to be used in the lesson by teacher and students. Earlier studies conducted by TREAT used a textbook observation schedule termed TEXTOR to explore how teachers and students use textbooks and teaching resources in the classroom. The original TEXTOR schedule sought to identify

- the details and condition of the materials being used (a)
- the length of time taken to issue and collect texts (b)
- how the student gained access to texts (c)
- the length of time texts were used in teaching and learning (d)
- whether pre-reading or activation and assessment of prior learning took place (e)
- how did students read the text (f)
- what tasks were set by the teacher (g)
- were the texts to be used for homework (h)
- how did the students use the text in the classroom (i)
- what was the teachers purpose for using the texts in class (j)
In this study, only items a (the details and condition of the materials being used), c (how the student gained access to texts), and j (what was the teachers purpose for using the texts in class) were observed and analysed in two schools over a one week period in the 10 lessons.

In the 10 lessons observed the 7 teachers handed out photocopied sheets (handouts) in 8 (80%) of the lessons. In two of the lessons overhead projections of the handouts by the teacher accompanied student use of the photocopied handouts.

The 7 teachers handed out 532 photocopied pages in the lessons observed. Since the 10 lessons contained 207 students, teachers hand out approximately 2.5 pages per student per lesson. This figure of 2.5 photocopied pages per lesson correlates with two other TREAT studies on photocopying handouts in lessons. Horsley, (1994) in a study of an expert teacher's use of textbooks concluded that expert teachers tended to hand out specially prepared photocopied lesson notes and activities (2.5 pages per student per lesson). A yet to be published 2001 TREAT study on how final year practicum students resourced their teaching and learning in their classrooms also calculated a 2.5 pages per student per lesson figure. In one of the lessons where no photocopied handouts were used the teacher used textbooks from a book room to resource teaching and learning. In only one of the lessons observed were paper resources not employed – in this lessons students completed a role play in a drama lesson. The conclusion to be drawn from this analysis is that in Australia teachers spend considerable time and energy in locating, selecting and preparing resources for their lessons.

**Use of Photocopied texts**

In 3 (30%) of the lessons observed teachers used photocopied textbooks. The textbooks were either not available due to funding constraints (1 lesson), or were compilations from different texts. In one lesson knowledge from an old text was updated and added to and the photocopied handouts reflected multiple texts. In these three lessons the teachers and students used the materials as both sources of knowledge and as sources for class activities and problems. Typically these lessons proceeded with the teacher introducing and previewing the material to be covered with the students. Students then read the material silently or aloud around the classroom. Discussion ensued to highlight key concepts, discuss important ideas and then students completed tasks set out in the materials. When asked why they choose and prepared these teaching resources teachers indicated that they “sought to provide the appropriate knowledge and activities for the curriculum and its outcomes and the students’ age and stage level, their abilities and interests.” Deeper analysis showed the photocopied textbooks were mediated by the teacher’s intended use. In the lesson where the photocopies were made of an existing text due to funding constraints the teacher’s decision did not reflect the ZPD. The material was chosen and photocopied to provide problems and activities for students to work
in unassisted (ZAD). In the other lessons the teachers obtained a wide variety of resources, based on their pedagogical knowledge of the students, and used them in various ways to create ZPD’s. For instance, one teacher used text photocopies as a basis for scaffolded discussion.

**Teacher Prepared Sheets and Handouts**

In five of the lessons observed, lessons were resourced by teachers who prepared their own teachers notes and handouts for their students.

These notes can be categorised into distinctive types

**Multiple Knowledge Sources**

In one of the lessons observed a History teacher prepared photocopied sheets which consisted of multiple knowledge sources, charts, diagrams, pictures, source documents and illustrations. These were collated from a number of textbooks and selected to provide the material that the teacher could construct ZPD for the class in teaching this particular topic. For example, the teacher created a collage of sources that the students investigated in collaborative groups.

**Tasks and activities**

In one of the lessons observed the teacher produced a photocopied sheet of tasks and activities for the students in her class. Students had access to textbooks and knowledge sources but the teacher regarded the tasks and activities in the textbook as too difficult and as not meeting the learning needs of her students. So new tasks and activities were produced and distributed, in addition these activities had a greater literacy focus than those in the textbook available. These tasks and the teachers’ use of them reflect more the idea of the Zone of Promoted Action. Rather than use tasks too difficult, beyond the ZPD, the teacher photocopied new and challenging tasks which were within the students’ zones of proximal development.

**Teacher prepared text**

In two of the lessons teachers prepared their own text based on their research of the topic to be copied with their class. In both cases schools had not purchased new textbooks for the students and the teachers were not prepared to use old textbooks with old knowledge. In both cases the teachers used new textbooks and internet sources to construct teaching notes with activities for the students and the lesson. These were photocopied and distributed to each individual student. The preparation of these lesson resources was an attempt by the teachers to construct ZPD for the students in the class.
Illustrative Material

In this lesson the teacher compiled and produced a collage of illustrative material for the students. These types of illustrative material have been observed in many lessons mostly in Art and History. Teachers photocopy a range of source documents or artworks produce a mini anthology, and use this in their explanations of principles and processes that they wish to highlight and reinforce for their students. Many of these illustrative collages are compiled and prepared by gaining access to multiple knowledge sources such as the full range of textbooks on the topic supplemented by other reference material, sometimes even from the teachers prior university subject study. One study of expert teachers use of textbooks showed that expert teachers often resource their teaching and learning in this way, in an attempt to develop a ZPD for the students.

STUDY 2

An analysis of Copyright Agency Limited (CAL) school photocopying records

It is often ignored that teachers, librarians, head teachers and senior teachers such as principals select teaching and learning resources that are used by students in classes. Indeed the planning of instruction and location of suitable resources are one of the main functions of teachers.

Each year CAL commissions an independent copyright survey in 120 schools in three states in Australia. The survey is representative of urban and rural, private and government schools and is conducted throughout the entire year. In 2001 the survey showed that on average 243 pages per primary student and 203 pages for secondary students were copied – 76% from books (mostly textbooks). (Other and artistic works making up 17%) These records are used to assign the funds that are collected by CAL to the authors and publishers of the photocopied works (expected to be almost 16 million AUD in 2002). There is some evidence that the CAL surveys under-represent the amount of photocopying conducted in Australia’s 10000 schools. Studies undertaken by Horsley (1994, 2002), from very small samples showed that typically teachers copy 2 pages per student per lesson. Nevertheless the photocopying data collected by CAL provide a rich source of data on the selection and use of resources in teaching and learning.

During 1998 CAL undertook legal action to increase the amount of funds received per photocopied page under the Copyright Act to reflect the increased costs of publishing educational materials. In preparation for this action individual school and textbook title records were accessed from the 1997-98 surveying period. The most commonly copied pages from school textbooks were identified from this research.
The table below shows the 5 most commonly photocopied textbooks from the CAL survey conducted in schools. (The study analysed the 50 most commonly photocopied textbooks). For example the most commonly photocopied text in the 1997 schools survey was Heinemann’s Observational Survey of Early Literacy Achievement. 44 schools photocopied this book, and 3451 copies of pages were made. Further research established the most photocopied pages in these commonly photocopied textbooks. Based on this information almost 20,000 AUD was distributed to the authors and publishers of this work alone.

<table>
<thead>
<tr>
<th>Total Pages Copied</th>
<th>Instances</th>
<th>Title of Text</th>
<th>Publisher</th>
</tr>
</thead>
<tbody>
<tr>
<td>3451</td>
<td>44</td>
<td>Heinemann Observational Survey of Early Literacy Achievement</td>
<td>Heinemann</td>
</tr>
<tr>
<td>3028</td>
<td>115</td>
<td>Signpost Maths 6</td>
<td>Pascal Press</td>
</tr>
<tr>
<td>2667</td>
<td>37</td>
<td>Mission 2000: Daily Meditations</td>
<td>Tabor Publishing</td>
</tr>
<tr>
<td>2634</td>
<td>81</td>
<td>8 Plus Maths</td>
<td>Longman Cheshire</td>
</tr>
<tr>
<td>2605</td>
<td>69</td>
<td>7 Plus Maths</td>
<td>Longman Cheshire</td>
</tr>
</tbody>
</table>

The 50 most photocopied textbooks from 1997 were analysed by school level (primary/secondary) and subject area. The photocopied pages and books were subject to content analysis to determine whether they consisted of:

a) tasks and activities for students
b) knowledge to be used as the basis for teaching
c) knowledge and tasks together
d) assessment instruments to measure student outcomes
e) teaching and learning support such as homework contracts or forms
f) teacher resource materials such as guidebooks on teaching

The Table showing this analysis is shown below

**Secondary 16 Books**

<table>
<thead>
<tr>
<th>Subject</th>
<th>Total</th>
<th>Activities/ Tasks</th>
<th>Knowledge</th>
<th>Assessment</th>
<th>Teacher Support</th>
<th>Teacher Resource</th>
</tr>
</thead>
<tbody>
<tr>
<td>English</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Maths</td>
<td>10</td>
<td>9</td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Science</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LOTE</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>1</td>
<td></td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Primary 34 Books**

<table>
<thead>
<tr>
<th>Subject</th>
<th>Total</th>
<th>Activities/ Tasks</th>
<th>Knowledge</th>
<th>Assessment</th>
<th>Teacher Support</th>
<th>Teacher Resource</th>
</tr>
</thead>
<tbody>
<tr>
<td>English</td>
<td>17</td>
<td>10</td>
<td></td>
<td></td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Maths</td>
<td>8</td>
<td>7</td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Science</td>
<td>4</td>
<td>2</td>
<td>1</td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>LOTE</td>
<td>3</td>
<td>1</td>
<td></td>
<td>2</td>
<td></td>
<td>1</td>
</tr>
</tbody>
</table>

The photocopying data showed that for the most copied 50 titles, the majority were primary titles. This may reflect the situation existing in NSW where primary Government and Non-Government schools are not allocated funds specifically for teaching and learning materials. The majority of the copying of these titles were class sets of photocopied pages. The class sets were mostly activities and tasks for lessons, and possibly for homework. The majority of photocopies reflect teachers providing resources for student unassisted work (the ZAD). Further analysis of the pages copied indicate that some copying was undertaken to provide knowledge (descriptive or expository text), some to be used in instruction, and some to be used in such activities as collaborative learning (ZPD) for students in classes. Smaller amounts of photocopying reflected teacher need for reference materials about teaching topics, new content or updating teaching methodology. Much primary photocopying was undertaken due to resource constraints.
There were significant differences in the characteristics of primary and secondary photocopying. There were major differences in subject areas (mathematics dominated primary and English secondary). As well there were major differences in the purposes and types of photocopying. A significant proportion of secondary photocopying was related to developing resources for creating classroom learning environments and ZPD, especially in English. Over 30% of secondary copying was of a teacher support and development nature, much fewer activities of ZAD type material was photocopied.

One of the major findings of classroom observation research on the use of teaching and learning materials in the classroom is that teachers mediate the use of teaching and learning materials. The argument used in this paper is that teachers utilize a textbook pedagogy that accords with how they perceive and use teaching and learning materials in the classroom. As a result the large scale photocopying study of the pages copied was followed up by small scale observational and interview research. Four teachers (two primary and two secondary) identified by the photocopying survey and known to the authors were contacted. They were interviewed and their use of the photocopies in their classrooms were analysed.

One of the secondary teachers taught Italian and used photocopies from Avanti, the twenty-seventh most photocopied title from the study. This teacher had a textbook available (not Avanti) for use with her class but photocopied pages 81, 106 and 107 from Avanti for her students. In using page 106 she argued that the activities in Avanti for this outcome better suited the ability and interests of her class, creating a zone of promoted action in selecting activities and tasks to be used. In using page 107 she created a ZPD around role play activity and conversation that the diagram in Avanti provided for the lesson. The teacher conceded though in one class in previous years she had used page 107 for unassisted student activity (ZAD). In this way the teacher mediated the way that teaching and learning materials were used.

Two of the primary teachers interviewed used the same photocopied pages (page 83 in Signpost Maths 6) in different ways. One teacher (A) photocopied a class set of the page and distributed the page to students for homework. This use reflected the ZAD approach that this teacher used in much of her mathematics teaching. The teacher typically conducted mathematics lessons by demonstrating to students how to complete a mathematical problem and then set seatwork and tasks where students could practice individual solutions to the problems. Much of her photocopying was to provide homework and activities in the ZAD. The other teacher (B) used this page in a different way, using the photocopies as the basis of a ZPD based around collaborative problem solution. She also photocopied a class set of the page but made on overhead projection of the page and worked with the class to jointly construct an answer to problem 1, thus creating a ZPD. Then students worked in groups to complete some of the other problems (ZPD). Tasks not finished in class were then assigned for homework.
This analysis accords with the textbook analysis undertaken as part of the TIMMS (international benchmark analysis of mathematics and science achievement). Video analysis of 87 lessons worldwide showed that in mathematics classrooms and lessons at least 90 per cent of lessons made use of a textbook or worksheet of some kind. This research also hypothesized that typical Australian mathematics lessons conform to the lesson pattern described in the classroom of teacher (A). The photocopying records reported in this research (in the predominance of activities and tasks) also lend support to the TIMMS conclusions about typical mathematics lessons in Australia.

**Competing Theories in the Role of Teaching and Learning Resources: The Rise of Learning Objects**

The explication of sociocultural theory and its implication for the analysis of the role of textbooks and teaching and learning resources has occupied the paper so far. However, a new competing theory on the roles of textbooks and teaching and learning materials has arisen from computing studies and e-learning education (Wiley, 2003). This section of the paper will briefly describe “learning objects” and draw comparisons and contrasts with the traditional textbook and teaching and learning resources.

Learning objects have been described in a number of ways:

- “modular digital resources, uniquely identified and metatagged, that can be used to support learning.” (National Learning Infrastructure Initiative)
- “any digital resource that can be reused to support learning” — David A. Wiley, “Connecting Learning Objects to Instructional Design Theory” The main idea of ‘learning objects’ is to break educational content down into small chunks that can be reused in various learning environments, in the spirit of object-oriented programming” — David A. Wiley
- “[A]ny entity, digital or non-digital, which can be used, re-used or referenced during technology supported learning” — Learning Object Metadata Working Group of the IEEE Learning Technology Standards Committee (LTSC)

In some views learning objects are seen as a new way of thinking about learning content and teaching and learning resources. Traditionally, the content of lessons and programs of study are presented in time periods ranging from 30 minutes to two hours. Learning objects are described as teaching resources, incorporating subject matter that are much smaller units of learning, typically ranging from 2 minutes to 15 minutes. In addition learning objects or re-usable learning objects are...
- Are **self-contained** – each learning object can be taken independently
- Are **reusable** – a single learning object may be used in multiple contexts for multiple purposes
- **Can be aggregated** – learning objects can be grouped into larger collections of content, including traditional course structures
- Are **tagged with metadata** – every learning object has descriptive information allowing it to be easily found by a search

The following learning objects are examples from the new resources of the Australian Learning Federation, established in 2002.

Learning objects are an attempt by online e-learning developers to supplant and replace textbooks. Unless learning objects are developed to have the following characteristics, it is likely the costs of e-learning environments will continue to be exhorbitant, restricting the use of e-learning. Learning objects are seen to be a mechanism for connecting online learning resources with detailed course objectives.

- **Flexibility.** If material is designed to be used in multiple contexts, it can be reused much more easily than material that has to be rewritten for each new context. It’s much harder to uncouple an object from the context of its parent course and then recontextualize it than it is to contextualize as part of design and development.

- **Ease of updates, searches, and content management.** Metadata tags facilitate rapid updating, searching, and management of content by filtering and selecting only the relevant content for a given purpose.

- **Customization.** When individual or organizational needs require customization of content, the learning object approach facilitates a just-in-time approach to customization. Modular learning objects maximize the potential of software that personalizes content by permitting the delivery and recombination of material at the level of granularity desired.

- **Interoperability.** The object approach allows organizations to set specifications regarding the design, development, and presentation of learning objects based on organizational needs, while retaining interoperability with other learning systems and contexts.
Facilitated of competency-based learning. Competency-based approaches to learning focus on the intersection of skills, knowledge, and attitudes within the rubric of core competency models rather than the course model. While this approach has gained a great deal of interest among employers and educators, a perennial challenge in implementing competency-based learning is the lack of appropriate content that is sufficiently modular to be truly adaptive. The tagging of granular learning objects allow for an adaptive competency-based approach by matching object metadata with individual competency gaps.

Increased value of content. From a business standpoint, the value of content is increased every time it is reused. This is reflected not only in the costs saved by avoiding new design and development time, but also in the possibility of selling content objects or providing them to partners in more than one context. (Longmire, 2002)

More funds are to be allocated to the development of learning objects in the next three years in Australia, England and the United States than for the purchase of textbooks in the last five years. In the view of proponents of learning objects textbooks are the old way of resource sharing. From the e-learning perspective textbooks can not be customized for individuals, they are difficult to link with other resources. According to Downes (2003) The vast majority of course syllabi require that students obtain more than one textbook. Courses frequently use only parts of textbooks; entire chapters are omitted as being beyond the scope and purpose of the course. Moreover, students frequently use parts of books (or parts of journals) in their research and reading. That’s why most university libraries come equipped with photocopiers... A “description” of the sine wave – or an account of the Holocaust, or a reading of Hamlet becomes “a piece of learning material” when it becomes able to meet a “learning objective.” Of course by ‘description of a sine wave’ we refer to more than merely a page or two of text plus an illustration. That’s not what happens in the classroom; students are given a variety of examples, asked to calculate their own examples, are tested on their understanding, etc. A better phrasing, perhaps, is a ‘lesson on sine wave functions’... While today most guides and references discuss online course authoring, the proper reference point is the authoring of learning objects, where a learning object is an element of a course as described above. As we have seen, a learning object may be one of any number of items: a map, a web page, an interactive application, an online video – any element that might be contained inside a course.

In this way learning objects are seen as becoming vastly superior to textbook presentations, as textbooks disappear into the e-learning trash compactor.
Context strategies

Proponents of learning objects such as Wiley (2003) have advanced a number of ways to enable contextualization of learning objects, depending on the systems and technologies available and on the extent to which the learning content needs to be adapted to individual needs. Following are some possible approaches.

- **Tailored wrappers.** Context wrappers consist of information that is associated with a learning object. One object can have multiple wrappers, each providing a different way of contextualizing the object. In a learning environment, an instructional designer might generate multiple context wrappers (some using audience-specific data). When a learner accesses the RLO, the context of the object will be a function of the correlation between learner attributes and content object attributes (described with metadata tags).

- **Tailored context frames.** As noted earlier, ideal RLO content is not addressed to one small audience. However, on the level of context, an object can be personalized with such techniques as humor, visual or linguistic themes, or explanations that relate it to a specific body of knowledge. Object framing and instructional activities can be specific to an organization or group of people, as long as they can be divorced from the object. Context frames can be designed to match learner profile characteristics such as interests, needs, level, knowledge, and performance gaps.

- **Adding context links to objects.** If a development environment allows for editing of learning objects themselves (not just metadata wrappers or context frames), then links can be added to the learning object that point to outside context. This way, developers may spend very little time changing the object and provide links to context that the learner can choose to follow or not. The linked context can be updated and can provide context for multiple objects.

- **Pattern templates.** Pattern templates provide a data structure based on metadata attributes defined by users. For learners (and instructional designers), these templates provide opportunities to contextualize information in a variety of meaningful ways according to variables defined by users. One application of pattern templates is the use of competency models to contextualize learning objects in relation to abilities, knowledge, and attributes of excellent performers in an organization (a performance-based approach to using learning objects). (Longmire, 2002)
In the jargon of learning object proponents “Whatever development environment and tools are used, sound instructional design will remain important both for customized development and for template-based development. The combination of thoughtful planning with intelligent deployment of advanced authoring tools will result in myriad benefits for both content producers and learners. The most successful learning object delivery systems will be able to provide not only learning object content, but relevant and meaningful context, as well.”

Learning objects are designed to be teacher free. And in the tradition of e-learning enthusiasts they are described as be able to meet the learning needs of individuals rather than groups of students. Currently e-learning discussion, government funding for ICT and new metatagging standards are based around the development of learning objects.

**Learning Object Critique**

From the point of view of textbook pedagogy and the sociocultural mediation of textbooks by teachers however, there are a number of problems with this notion of learning objects. Firstly, they ignore the sociocultural context in which learning is to take place. Secondly, they assume that all learners are at the same learning level. Thirdly and most importantly, the analysis of textbook selection, and use by teachers presented earlier in this paper strongly suggests that teachers may not use learning objects to create Zones of Proximal Development and thus produce effective learning and development. The analysis of the photocopied materials presented earlier indicated that many teachers resource learning within the students’ zone of actual development and this is likely to also be the case with the use of learning objects in e-learning environments by teachers. In addition, because learning objects have a universalised quality (and are metatagged in this way), they will not be able to be used by teachers to promote learning in the ZPA in the way that textbooks can be used. This aspect of instructional design has yet to be understood by the designers of learning objects.

An additional critique of learning objects from a sociocultural perspective is that these objects merely transmit information through text and animation and thus are primarily concerned with the transmission of knowledge rather than the construction of meaning by students. Further more as they lack a truly interactive dimension they do not enculturate students into general academic and specific disciplinary practices.

In some ways some of the illustrations and pedagogic devices in textbooks and teaching and learning materials are indistinguishable from learning objects that have been used to generate funding. The most commonly used diagram in textbooks, Pythagoras triangle has been used almost without change in textbooks for almost 500 years. Even though the world wide web and online environments have added to the diagram, made it interactive and provided interactive simulations of it; the diagram must be understood by a student as prior learning
otherwise all the online resources about Pythagoras’s triangle have no meaning.

Critics of learning objects have concluded that the term itself is meaningless and undervalues current educational practices. Two further worrying issues also concern learning object critics; research on current e-learning resources highlight the lack of orientation and context as the main weakness in this approach to supporting learning and photocopying of print by students in online learning environments is as least as prevalent as in non e-learning environments. Despite this, learning object approaches have been adopted by governments eager to provide online learning environments that are hypothesized to replace textbook and print in the near future.

REFERENCES


Chapter 4

Professional Education:

Quality Across the Professions
CHAPTER 4

Professional Education: Quality Across the Professions

4.1 The Publications


These publications comprise one paper in a refereed journal and one chapter of the Review of Teacher Education (Quality in Other Professions). The Review of Teacher Education in New South Wales, published in 2000, represented a watershed in studies in this genre. In responding to the recommendations of the Review, the New South Wales Government set up a working party to investigate the main recommendation, namely the establishment of an Institute of Teachers to restructure the profession. The chapter researched and authored by me on 'Quality in Other Professions' was the major research project conducted by the Review. Other chapters reflected the submissions presented to the Review responded to the various workshops and conferences developed out of the review process and reviewed and synthesised literature relevant to the development of high quality teaching and teaching standards. My chapter (Horsley 2000) had a major impact on the development of the recommendations, because it showed clearly that other professions had developed structures to enable them to become self-regulating.

The refereed journal article (Horsley and Thomas 2003) explored aspects of professional regulation and discipline from a cross-disciplinary and cross-professional perspective. This research presented a comparison of different professions as they attempted to regulate professional standards. One of its major findings was related to how different professions organise professional disciplinary procedures. The insights from this research have assisted in the development of improved processes and procedures in these areas in education.
4.2 Research Purpose

The papers presented in this chapter critically examined how other professions manage their major functions, operations and responsibilities. The aim of this research was to investigate aspects of cognate and other professions which could lead to insights that could inform the review of teacher education. The terms of reference promulgated by the Minister of Education and Training in New South Wales in the establishment of the Teacher Education Review, specifically requested that systems and procedures used to prepare and initiate personnel into other professions in New South Wales be investigated.

This research highlighted that other professions had developed a range of procedures around the issues of professional regulation and discipline. Subsequent to the Teacher Education Review, I examined how different professions dealt with practices that may be termed unprofessional, negligent or below standard. In other professions concerns about litigation and attempts to raise the standard of care offered to clients and the improvement of professional standards, necessitated changes to professional disciplinary regulations. The purpose of my research was to explore these regulatory procedures so as to develop insights as to how education might proceed in this area. This research, therefore, is critical to my portfolio.
### 4.3 Research Methodology

The research methodologies employed were functional, process, product and competitive benchmarking (see chapter 5). First used in business, functional benchmarking was developed in the United States in the early 1980's. Functional benchmarking refers to comparisons between the operations of one organisation as against those of another. Definitions of benchmarking at this time saw benchmarking as a systematic and continuous process, a process that continuously measures and compares. At this stage of its evolution, benchmarking came to be seen as basically involving four steps.

1. identification of the object of study and comparison

2. selection and identification of superior performance in benchmarking partners

3. collection and analysis of the comparative data

4. use of comparative data to set performance goals for process and method improvement.

As benchmarking developed as a methodology, it became more sophisticated, and by the late 1980s had evolved into a powerful tool in business for improving both management and performance. Further application of benchmarking methodologies also identified different types of benchmarking based around the object of comparison. Benchmarking practices became generically classified according to the nature of the object of study and the sorts of comparisons made. *Process benchmarking* came to describe benchmarking that compared operations or work practices for certain types of processes. Product benchmarking described
benchmarking which compared products or services, the outputs of particular processes operating in an organisation, while strategic benchmarking was used in describing comparisons of organisational structures or management practices or business strategies. Competitive benchmarking came to describe those comparisons with direct competitors, both in business or in other organisations. Competitive benchmarking involved comparison of the outputs of businesses, whether of services or products.

The research on other professions employed all these types of benchmarking. The benchmarking of accreditation, licensing and registration systems and professional structures were based on the functional and process benchmarking processes. The comparison between nursing and teaching focusing on induction and registration, is based on competitive and product benchmarking. The evaluation of legislation creating professional bodies and the comparison of professional regulatory structures is based on a product and functional approach. The tables, 6.2. and 6.3 (pages 97 and 103) in the research presented from the Quality in Other Professions, are exemplars of a functional and process benchmarking approach.

4.4 Co-authorship

Chapter 6 of the Teacher Education Review was conceptualised and written by Horsley. For the refereed article on Professional Regulation and Disciplinary Procedures Across the Professions (Horsley 2003), the benchmarking methodology and data on which the refereed paper was based, was conducted by Horsley. David Thomas investigated issues related to specifically disciplinary issues within the medical profession, and also current trends and thinking about professionalism and the professions in general. The paper was written collaboratively.
4.5 Recognition of the Research

The Review of Teacher Education (Ramsey 2000) has had a major impact on shaping the debate on the future of the teaching profession. It would be difficult to overestimate its impact in New South Wales ('Critical Times: Critical Choices') in creating the focus for debate on the future of the profession. As noted, the Minister's response to the Review was to establish a working party to investigate the feasibility of establishing an Institute of Teachers as a professional body for teachers. I was asked to conduct a seminar for the working party and present my findings from the study of quality in other professions. The comprehensive nature of the review was enriched by the discussion of the other professions. As a result I was invited to give seminars at universities for teacher education staff and to speak to teacher unions while I also conducted a series of seminars for parents and teachers in schools. In the post review period I conducted 15 invited seminars on the differences between teaching and other professions. The Independent Education Union in New South Wales convened a conference on the Future of the Profession and I was invited to give a keynote presentation ultimately published as Deeds Not Words (Horsley 2001), an explication of the development of professional standards in other professions.
Quality Matters. Revitalising teaching: critical times, critical choices, page 94-118
6. Quality in other professions

The evidence gathered during the Review is unequivocal: while teachers are most often described as professional people, teaching is not a profession. The terms of reference of the Review required it to examine the ‘systems and procedures used to prepare for and enter other professions’. Understanding the core issues of what is a profession and what sets it apart from vocations and occupations are important contexts for this Review.

The professions of accountancy, dentistry, engineering, law, medicine, nursing, psychology and social work were looked at particularly because they have:

- some characteristics similar to teaching
- a range of professional training structures
- varying status within the community.

Specific comparisons were made between teaching and nursing, given the similarities they have under the broad umbrella of the ‘helping and caring professions’. Further, nursing and teaching are two professions where the State is the major employer.

Information of this kind has not been collected previously in any recent reviews of teacher education in Australia. The study provided:

- comparative information on how members of different professions are prepared, including the extent and form of on-the-job training, the structure of professional experience, and the systems of accountability and regulation
- information about the ways in which members of different professions update their knowledge and skills
- insights and understandings about the processes and strengths of professional preparation in other areas.

The information gained from the study provided a basis for comparing the quantity and quality of teacher education with professional preparation and continuing education in other professions. (Appendix 4)

Two main models for establishing and maintaining a profession were identified.

The first model is that which covers the statutory professions. These are the professions established by and subject to law, act, decree or statute. Examples of statutory professional authorities in New South Wales include: The Nurses Registration Board (New South Wales); the Dental Board of New South Wales; The New South Wales Medical Board; Psychologists Registration Board; and The Law Society of New South Wales.

The second model covers the self-regulated professions, being those professions established to regulate their own standards and ethics of practice through an independent body. Self-regulating professional bodies are: the Australian Association of Social Workers; the Institution of Engineers, Australia; The Institute of Chartered Accountants in Australia; CPA Australia; and the Royal Australian College of General Practitioners.

A key difference between the two models is that those members of statutory professions found to have breached codes of professional or ethical practice, can lose their right to practise. On the other hand, members of self-regulatory professions lose only their membership of the profession and can, theoretically at least, remain working in the general area.

Methodology

Information was provided through a range of primary and secondary sources. Initially, key personnel involved in providing professional experience were interviewed to identify the relevant stakeholders, institutions, processes and structure within each profession. A wide range of settings was visited during the Review where professional experience was provided. Information was obtained from the web sites of the professional statutory and regulatory bodies, many of which are highly sophisticated and comprehensive.

In addition, visits were made to teaching hospitals, The Law Society of New South Wales, and other institutions involved in providing professional experience.

Finally, documentation about pre-service training, regulation, accreditation, registration, and continuing professional development was examined to establish an overview of the professional organisation, preparation and continuing education in the professions selected, as at the commencement of the year 2000.
6.1 Defining a profession

How other professions view themselves is fundamental to how they manage issues such as membership, registration, and the value they attach to professional learning and growth.

Increasingly, professions are moving toward a social contract model emphasising a commitment to client service in return for the privilege of self-regulation. Such a model requires a code of ethics to govern the practice of the profession’s members. In return, the community grants a high degree of autonomy to the profession and accepts that its practitioners are worthy of high status. The Australian Council of Professions describes the social contract nature of the relationship between a profession and its clients in the Council’s statement on professionalism and professions.

A profession is a disciplined group of individuals who adhere to ethical standards and uphold themselves to, and are accepted by the public as possessing special knowledge and skills in a widely recognised body of learning derived from research, education and training at a high level, and who are prepared to exercise this knowledge and these skills in the interest of others. It is inherent in the definition of a profession that a code of ethics govern the activities of each profession. Such codes require behaviour and practice beyond the personal moral obligations of an individual. They define and demand high standards of behaviour in respect to the services provided to the public and in dealing with professional colleagues. Further, these codes are enforced by the profession and are acknowledged and accepted by the community.

The Council’s code of ethics is set out in Table 6.1. Members of the Council include many of the self-regulated professions studied, including: The Institution of Engineers, Australia; Australian Dental Association; CPA Australia; and The Institute of Chartered Accountants in Australia.

Teaching does not operate in this way; it is neither self-regulatory, nor does the profession itself identify its service obligations. To emphasise this point, teaching is not represented by a body through which it could seek membership of the Australian Council of Professions.

Table 6.1  The Australian Council of Professions - Code of Ethics

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>at all times place the responsibility for the welfare, health and safety of the community before their responsibility to the profession, to sectional or private interests, or to other professionals;</td>
</tr>
<tr>
<td>2</td>
<td>act so as to uphold and enhance the honour, integrity and dignity of the profession;</td>
</tr>
<tr>
<td>3</td>
<td>perform professional practice in only their areas of competence;</td>
</tr>
<tr>
<td>4</td>
<td>build their professional reputation on merit and shall not compete unfairly;</td>
</tr>
<tr>
<td>5</td>
<td>apply their skills and knowledge in the interest of their employer or client for whom they shall act, in professional matters, as faithful agents or trustees;</td>
</tr>
<tr>
<td>6</td>
<td>give evidence, express opinions or make statements in an objective and truthful manner and on the basis of adequate knowledge;</td>
</tr>
<tr>
<td>7</td>
<td>continue their professional development throughout their careers and shall actively assist and encourage professionals under their direction to advance their knowledge and experience.</td>
</tr>
</tbody>
</table>


6.2 Professional registration and regulation models

All professions reviewed, except teaching in New South Wales, have a professional or regulatory authority which is responsible for registering applicants as members of their profession. Many of the registration bodies also manage mandated systems of continuing professional development. The study identified a continuum of professional regulation and registration models. These range from statutory regulation with accompanying registration procedures, to co-regulation and finally, in the case of teaching, to little or no regulation.

Most health professions in New South Wales are managed by professional registration boards, for example, the Nurses Registration Board of New South Wales. The Law Society of New South Wales also acts as a registering authority for the legal profession.

Such registration bodies have a statutory responsibility for accrediting individuals to practise their profession. They are also self-regulatory as their procedures are administered by those within the profession who possess the relevant knowledge to make judgements about professional issues in the workplace. As a result, these registration bodies have both a statutory and a social contract aspect to their operations. They emphasise the concepts of public interest and public confidence.

An important sanction available to these bodies is that non-registration means that by law an individual may not practise in the respective profession.

In the middle of this continuum of professional registration are co-regulatory systems. In a co-regulatory model, registration systems are established by a professional body. Individual professionals become members of the body and are registered by it. However, the professional body does not operate under statute and is unable to prevent unqualified members from practising in their profession. Such bodies may only refuse membership. Social work and accountancy operate within this particular model. In some of these co-regulated professions, governments have a role monitoring the profession and proposing standards. Co-regulation models place a strong emphasis on their social contract with the community.

Teaching lies at the other end of the regulation scale in that it is largely a ‘no regulation’ model. Although teachers in government schools are required to hold a professional qualification from a recognised university, teachers in non-government schools are not required under the Education Act 1990 to hold professional qualifications. In teaching, there is no professional body to oversee registration, accreditation and the development of professional standards or accountability.

Table 6.2 sets out registration, professional licensing requirements and practising licence mandates across the professions under consideration. The different modes of practice and operation are a response to the needs which exist within each profession.

The Nurses Registration Board of New South Wales approves nurse education curriculum and registers nurses on completion of their nursing courses. The Dental Board of New South Wales registers dentists who have completed an approved course of training.

The registration of solicitors and barristers in New South Wales is set out in the Legal Professions Act, 1987. The legislation establishes a professional body, The Law Society of New South Wales, which issues practising certificates to applicants completing law degrees and professional legal training (PLT) through both universities and the Solicitors Admission Board.

The legal profession in New South Wales has had a staged system of professional registration since 1983. All solicitors are initially registered with a restricted practice licence (Class B). New solicitors are required to work under the supervision of unrestricted (Class A) registrants for a minimum period of two years. Only Class A registrants may establish a new legal practice, become partners in legal practices or provide unsupervised legal advice. In addition to two years’ supervision, Class A registrants must participate in mandated Practice Management Professional Development (PMPD).

In medicine, practising accreditation is regulated by the specialist Royal Colleges. The New South Wales Medical Board is the registration authority for all medical practitioners in the State. The principal responsibility of the New South Wales Medical Board is to protect the public.

The Board allows only properly trained doctors to be

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## Table 6.2 Licensing requirements – a comparison with other professions

<table>
<thead>
<tr>
<th>Profession</th>
<th>CPD Mandated Requirements*</th>
<th>Qualifying Body</th>
<th>Licensing Requirements</th>
<th>Licence Renewal</th>
<th>Statutory</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teaching</td>
<td>nil</td>
<td>nil</td>
<td>nil</td>
<td>nil</td>
<td>no</td>
</tr>
<tr>
<td>Nursing</td>
<td>nil</td>
<td>NSW Nurses Registration Board</td>
<td>Renewable annually</td>
<td>Renewable annually</td>
<td>yes</td>
</tr>
<tr>
<td>Dental Surgery</td>
<td>nil</td>
<td>Dental Board of NSW</td>
<td>Renewable annually practicing certificate</td>
<td>Renewable annually</td>
<td>yes</td>
</tr>
<tr>
<td>Law (Solicitors only)</td>
<td>Mandatory Continuing Legal Education (MCLE)</td>
<td>The Law Society of NSW</td>
<td>• initial admission by Supreme Court   • renewable annually practising certificate issued by Law Society</td>
<td>Self regulating</td>
<td>yes</td>
</tr>
<tr>
<td>General Practitioner**</td>
<td>Points system over a three year period</td>
<td>Royal Australian College of General Practitioners</td>
<td>Regular point statements provided by RACGP</td>
<td>Triennial</td>
<td>no</td>
</tr>
<tr>
<td>Medicine – all specialist fields</td>
<td>nil</td>
<td>NSW Medical Board</td>
<td>Graduation and successful Internship</td>
<td>Renewable annually</td>
<td>yes</td>
</tr>
<tr>
<td>Social Work</td>
<td>30 points annually</td>
<td>Australian Association of Social Workers (AASW)</td>
<td>Individuals must submit a log of professional development programs attended</td>
<td>Random biannual audit</td>
<td>no</td>
</tr>
<tr>
<td>Engineering</td>
<td>150 hours in a three year period relevant to area of practice</td>
<td>The Institution of Engineers, Australia</td>
<td>National Professional Engineers Register (NPER)(individual must keep records)</td>
<td>Random audit</td>
<td>no</td>
</tr>
<tr>
<td>Psychology</td>
<td>nil</td>
<td>Psychologists Registration Board</td>
<td>Annual renewal fee</td>
<td>nil</td>
<td>yes</td>
</tr>
<tr>
<td>Accountancy</td>
<td>90 hours structured CPD averaged over a triennium</td>
<td>Certified Practising Accountants, Australia</td>
<td>Members maintain records of CPD activities</td>
<td>Triennium random audit</td>
<td>no</td>
</tr>
<tr>
<td></td>
<td>120 hours over a three year period (at least 20 hours annually)</td>
<td>The Institute of Chartered Accountants in Australia (ICAA)</td>
<td>Individual maintains annual record</td>
<td>Annual membership subscription</td>
<td>no</td>
</tr>
</tbody>
</table>

* CPD - continuing professional development
** For recognition as a general practitioner by the Health Insurance Commission which establishes a Medical Board to regulate membership of the profession
CHAPTER 4 Professional Education

registered and requires that they maintain proper standards of conduct and competence. The Board is a statutory authority, established under the Medical Practice Act 1992 (amended in June 2000, now the Medical Practice Amendment Act 2000), to administer the provisions of the Act in relation to the practice of medicine in New South Wales\(^\text{19}\).

The new legislation introduces performance based assessment. The Medical Board will be developing strong links with the specialist Royal Colleges, as one of the requirements of registration will be the need for practitioners to advise the Board of the continuing professional development undertaken.

Current legislation means that the Medical Board investigates only isolated incidents brought to its attention by an individual. However, moves toward performance based assessment would mean that reported incidents could be considered in the context of the wider practice of the medical practitioner involved. Ultimately, performance based assessment would include a review of medical records, interviews and oral examinations, and direct observation of clinical performance.

Standards for initial preparation and continuing education in medicine are the responsibilities of professional organisations. One such body, the Royal Australian College of General Practitioners, is the largest general Practitioner organisation in Australia as well as the largest clinical college. Its mission is to promote high standards of care in general practice through education, training and research for the benefit of members of the community\(^\text{19}\).

Engineering practice is regulated by the Institution of Engineers, Australia, which has developed standards for engineering courses and a registration system to license engineers.

The Australian Association of Social Workers assesses and approves social work course curricula, which guarantees completing students their eligibility to join the Australian Association of Social Workers. Licensing boards operate by:

- assessing, approving and accrediting professional education courses and curricula
- licensing, registering and providing practising certificates to individual professions
- developing and operating disciplinary processes.

Legal, medical, nursing and dental authorities conduct all processes.

Professional performance accountability

The social contract nature of professional registration, accreditation and licensing in nursing, medicine, dentistry, accounting and law has resulted in structured procedures for responding to issues of unsatisfactory professional conduct.

In nursing, the Nurses Registration Board of New South Wales, as the statutory authority and the Health Care Complaints Commission [HCCC], an independent body, handle disciplinary matters relating to health issues. This involves:

- accepting complaints lodged by the public
- consulting on the pathway for all complaints
- providing written notification to the nurse concerned
- coordinating mediation or conciliation where warranted
- undertaking investigation if necessary
- referring investigated complaints to Professional Standards Committees established by the Nurses Registration Board of New South Wales
- determining penalties if complaints are sustained.

The New South Wales Nurses Act 1991 defines professional misconduct and unsatisfactory professional conduct. The definition is set out in Appendix 4 (Table A4.4).

In law, a Legal Services Commissioner is empowered by the Legal Profession Act 1987. The Act provides the machinery and procedure for the making and determination of complaints about legal practitioners. The Commissioner’s powers are described in Appendix 4 (Table A4.5).

In medicine, the New South Wales Medical Board is able to receive complaints about doctors from anyone in the community. The Board reviews each complaint and assesses the best means of addressing the issues raised in it. This assessment is undertaken by the Medical Board’s Conduct Committee in conjunction with the Health Care Complaints Commission (HCCC).

The Medical Board and the Health Care Complaints Commission have a range of avenues available to them to deal with a complaint. These avenues include:

- referring a complaint for further investigation
- taking urgent action, including suspension if the doctor poses a serious threat to the public
- referring a complaint to another person or body
- referring a practitioner to undergo a medical assessment
- determining that no further action be taken on the complaint.

Once an investigation has been completed by the Health Care Complaints Commission, a recommendation may be put to the Board to refer the matter to a disciplinary hearing. This may take the form of a Medical Tribunal, Professional Standards Committee or counselling.

After a complaint has been referred to a disciplinary hearing, the Board makes all the arrangements to convene a hearing and ensures it is conducted in accordance with the legislative requirements. The Board then implements the decisions of the disciplinary hearing and ensures that there is compliance with the orders of the Committee or Tribunal.

In dentistry, matters of conduct are managed by the New South Wales Dental Board and covered by the Dentists Act 1989. The Ethics Committee, which is a sub-committee of the Board, addresses complaints regarding the professional conduct of individual members of the profession. The Australian Dental Association (ADA), the professional organisation for dentists, has also established procedures to deal with complaints made against its members. These are detailed in its Code of Ethics and Conduct Guidelines\(^{21}\).

In accountancy, the Institute of Chartered Accountants in Australia (ICAA) and CPA Australia have a joint code of professional conduct that is mandatory for all members, affiliates and registered graduates. The Code recognises that the objectives of the accountancy profession are to work to the highest standards of professionalism, to attain the highest levels of performance and generally to meet public interest requirements. Non-compliance can lead to disciplinary proceedings identified in Article 27 of the Articles of Association for CPA Australia and By Law 40 for ICAA. The processes to manage purported breaches of the code are slightly different in both organisations. These processes may include the complaint being:

- submitted in writing with supporting documentation
- referred to an investigating committee whose sole purpose is to determine whether the member has a case to answer (CPA Australia only)
- referred to a disciplinary committee.

An appeal process is also available.

For complaints upheld, penalties are applied in accordance with the articles. These could include forfeiture of membership, fines, censorship, need for additional professional development or a practice review.

In teaching, matters of professional conduct are the concern of employers rather than the profession acting through agreed standards of professionalism. Employers have developed codes of conduct and practice to provide a framework for professionalism in teaching.

Teaching is unique when compared with the other professions studied, having no professional registration authority, no mandated system of continuing professional development and no professional oversight of teaching standards or practice.

### 6.3 Continuing professional development

Of particular interest to the Review was the view, often expressed both by members of professional bodies and the wider community, that the image of a profession is correlated to public and well advertised procedures for continuing professional development. For example, in accountancy:

As a self-regulated profession it is obligatory to demonstrate to the community a commitment to keep abreast of current developments and provide the high standard expected of chartered accountants\(^{22}\).

CPA Australia has recently announced enhancements to its rigorous continuing professional development requirements.

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From 1 January 2000, the continuing professional development (CPD) commitment required of CPA Australia members and fellows will be increased to 90 hours of structured continuing professional development averaged over a triennium. From 1 January 2003, the continuing professional development requirement for members or fellows will increase to 120 hours of structured continuing professional development averaged over a triennium.

In general practice in medicine, the Royal Australian College of General Practitioners approaches professional development through a combination of quality assurance and continuing education. Under the current scheme, general practitioners must complete continuing medical education units, a clinical audit and professional development totalling 130 units over three years. The aim of the College’s quality assurance and continuing education program is to assist general practitioners in Australia maintain and improve the quality of care they give to patients and promote the highest possible standards of care to the community. A key objective is to demonstrate the accountability of general practitioners to the community by:

- documenting participation in effective quality assurance and continuing medical education which responds to community needs
- discussing quality general practice with community groups
- identifying constraints on the delivery of quality general practice care

Furthermore, the College has developed a rationale for continuing professional education and research on its effectiveness. This rationale is set out in Table 6.3. In law, a market research study undertaken in 1996 by Keys Young on behalf of The Law Society of New South Wales indicated that lawyers are acknowledged by the broader community as having specialised knowledge and skills. The research found that the community was aware that in addition to their initial qualification, lawyers had to ‘keep up with changes and new developments in the law’

Similar studies overseas have drawn the same link between public perception and continuing education.

The Law Reform Committee of The Law Society of New South Wales concluded in 1985 that the mandatory continuing legal education (MCLE) scheme was a necessary response to the public’s criticism of the profession and its own concerns about member competence. While this Committee also recognised that the scheme was not able to solve all the profession’s problems, it did suggest ‘that there is an obligation upon the profession to maintain and improve its standards and to make the public aware of those standards and the value that is to be attributed to them’. A mandatory scheme for on-going professional development is one of the profession’s responses to increased public scrutiny and demands for accountability. In addition, a national discussion paper on the review of the Federal civil justice system released by the Australian Law Reform Commission in August 1999, suggested that ‘all states and territories adopt mandatory continuing legal education (MCLE) requirements for all practising lawyers’. This recommendation was adopted in April 2000.

Within the statutory professional organisations, accountancy, law, medicine, social work and engineering have developed mandatory systems of continuing professional development. For example, Table 6.4 sets out the rationale for continuing professional development in social work and law. In the professions of law, medicine, engineering, social work and accountancy, mandatory continuing professional development has been linked by the relevant registration body to membership renewal. In law and medicine, unless its members keep up-to-date through on-going professional development, licences or certificates to practise are not renewed. There are no such requirements in teaching. The structure, operation and funding of continuing professional development across the professions are set out in Table 6.5. The table shows that teaching, unlike most other professions studied, does not link either professional development requirements or funding of professional development to any mandatory licence renewal or assessment system.

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127 Royal Australian College of General Practitioners 1999-2001, Quality assurance and continuing education program.
128 The Law Society of New South Wales, Market research study, 1996, p. 5.
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Table 6.3 Theoretical Basis of the Quality Assurance & Continuing Education Program

The Australian community expects and deserves doctors who continually strive to provide the highest standards of care. Like other clinical colleges in Australia and overseas, the RACGP has responded to this expectation by introducing a Program that requires participation in quality assurance and continuing education.

With the attendant cost to providers and participants, it begs the question: “Does this program make a difference?” To do so, it is based on good research evidence about how quality assurance and continuing education are effective in medical practice.

Evaluation shows that well designed CME almost always improves doctors’ knowledge. More sophisticated research in the past twenty years has aimed to evaluate more complex impacts of CME such as doctor performance and patient health outcomes. Systematic reviews and meta-analyses of CME impact studies show convincingly that quality assurance and continuing education activities can improve doctors’ knowledge, competence and performance and patients’ health outcomes.

Note: CME – Continuing Medical Education

Source: Royal Australian College of General Practitioners 1999-2001, Quality Assurance and Continuing Education Program

Table 6.4 Objectives of professional development – Law and Social Work

Law
The Law Society’s Handbook for the Legal Education and Professional Development Solicitors articulates the following aim for professional development:

“Professional development will foster the development of skills and knowledge of solicitors necessary to provide high quality legal services to the community and promote a spirit of continuing learning amongst solicitors. Professional development activities will enable solicitors to:

- acquire a wide range of skills relating to the delivery of legal services and the management of their practices;
- work with and train others involved in the delivery of legal services;
- maintain up-to-date knowledge of the law;
- master new areas of law;
- keep up-to-date with changes in the practice of the law; and
- maintain and enhance their level of competence.”

Social Work
The primary objective of the CPE policy is to ensure that social workers maintain the highest possible standards of practice through a commitment to continued learning in all fields of social work practice.

This continued learning takes a variety of forms including conferences, seminars, authoring an article, teaching, professional reading, supervising students.

CPE aims to:

- maintain high standards of practice in the social work profession
- provide members with important information and training
- allow members to achieve Accredited Social Worker status, with high professional standards recognised in the industry and the community at large
- promote accountability.

Note: CPE – Continuing Professional Development

Australian Association of Social Workers, http://www.aasw.asn.au
Examples of continuing professional development frameworks for medicine, law and accountancy are outlined in Appendix 4 (Tables A4.1, A4.2 and A4.3).

The medical profession operates the most comprehensive system of licence renewal and continuing professional development.

The emphasis given to lifelong learning across other professions, through mandatory certification requirements, is also reflected in the level of support provided by employers for professional development. This support is either in the form of time away from work or financial assistance through the payment of course costs or travel and accommodation costs.

Although much professional development work is in the form of short courses, either undertaken within or outside the workplace, an increasing proportion is in the form of higher or postgraduate degrees and in particular course work degrees.

The level of employer support for employees involved in postgraduate coursework was surveyed in the 1999 Graduate Destinations Survey conducted by the Graduate Careers Council of Australia. Figures 6.1 and 6.2 compare the level of support across selected professions.

The graphs show that in almost every profession, a greater proportion of employers provide time away from work rather than financial support. There are continuing education activities for teachers that are not captured by these data. But this is no different from other professions. The massive retraining exercise in the accountancy profession that has ensued from the implementation of the Goods and Services Tax (GST) is but one example.

In comparison with the other selected professions, education and training ranks 19 out of 27 for financial support and 27 out of 27 in the provision of time to undertake further studies.

Although there are differences in the size of the professions and their response to the survey, the results are highly informative. The issue of professional learning is taken seriously in other professions and although there is a clear separation of employer responsibilities from those of employees, employers see benefit in advancing their ‘human capital’.

6.4 Maintaining currency: comparing professions

Every profession includes members who leave and rejoin. In the past, initial pre-service training and subsequent professional experience were seen as providing all the necessary competencies for professional practice over the course of professional life.

It is now acknowledged that changes in professional knowledge, skills and attitudes are more rapid and demanding. Significant periods of absence from professional practice now require training to guarantee currency and to renew, refresh and add to the professional skills still retained.

Although recognised as an issue, the bodies considered do not have explicit requirements for a person seeking to re-enter the profession after a period of absence. Nevertheless, in those professions where the employers have systems which require maintenance of currency to be demonstrated, there appear to be two types of systems evolving.

The first involves explicit mandatory requirements where returning professionals must undertake set programs of study. The second involves case-by-case review where returning professionals must demonstrate to registration and accreditation bodies how they have maintained currency.

Medicine, nursing and social work all require continuation of membership or registration to the professional organisation and, where relevant, maintenance of the continuing professional development programs mandated by the professional organisation.

These data support the evidence available to the Review that continuing education for teachers during employment is given a low priority by most employers. It is an area that employers of teachers, the university and the profession must address.

For the professions studied, nursing is the only one that offers a refresher course. These are designed for registered nurses wishing to return to the workforce. There is an understanding within the profession that nurses will undertake a refresher course before re-employment in the State hospital system if they have not worked in the field within the previous five years.
### Table 6.5  Continuing professional development (CPD)
Professional development procedures - a comparison with other professions

<table>
<thead>
<tr>
<th>Profession</th>
<th>CPD Mandated Requirements</th>
<th>Licence Renewal</th>
<th>Providers</th>
<th>Assessment System</th>
<th>Funding*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teaching</td>
<td>nil</td>
<td>nil</td>
<td>Various providers, no accreditation system</td>
<td>nil</td>
<td>Employer and employee</td>
</tr>
<tr>
<td>Nursing**</td>
<td>nil</td>
<td>Prescribed annual fee accreditation system</td>
<td>Various providers, no</td>
<td>nil</td>
<td>Self funded OH&amp;S is employer funded</td>
</tr>
<tr>
<td>Dental Surgery</td>
<td>nil</td>
<td>Annual renewal with fee</td>
<td>USyd,Aust Dental Association, others</td>
<td>nil</td>
<td>Self funded</td>
</tr>
<tr>
<td>Law</td>
<td>Mandatory continuing legal education (MCLE) Minimum of ten hours a year</td>
<td>Self regulating</td>
<td>Various providers within Law Society Regulatory Framework</td>
<td></td>
<td>Employer and employee approx. $60 - $90 per point</td>
</tr>
<tr>
<td>General Practitioner</td>
<td>Points system over a three year period</td>
<td>Triennial</td>
<td>Various providers accredited by the qualifying body</td>
<td></td>
<td>Self funded</td>
</tr>
<tr>
<td>Specialist</td>
<td>Points system for most specialities</td>
<td>Varied</td>
<td>Universities (continuing education) Royal Colleges</td>
<td>Varied</td>
<td>Self funded</td>
</tr>
<tr>
<td>Social Work</td>
<td>30 points annually</td>
<td>Random biennial audit</td>
<td>Australian Association of Social Workers, others (double points if activity is offered by the qualifying body)</td>
<td>Published schedule of activities and points, Professional knowledge, Development of improved policies</td>
<td></td>
</tr>
<tr>
<td>Engineering</td>
<td>150 hours in a 3 year period relevant to area of practice</td>
<td>Random audit</td>
<td>Institution of Engineers, Australia In-house education programs and other providers</td>
<td>Formal education, Informal learning, Conferences, Presentations, Service activities, Industry involvement for academics</td>
<td></td>
</tr>
<tr>
<td>Psychology</td>
<td>Nil</td>
<td>annual renewal</td>
<td>Nil</td>
<td>Nil</td>
<td></td>
</tr>
<tr>
<td>CPA Accountancy</td>
<td>90 hours structured CPD averaged over a triennium</td>
<td>Monitored by Australian Psychological Society</td>
<td>APS – Masters Degree in Psychology</td>
<td>Endorsed or conducted by APS</td>
<td>Self funded</td>
</tr>
<tr>
<td>ICAA Accountancy</td>
<td>120 hours over a three year period (at least 20 hours annually)</td>
<td>The Institute of Chartered Accountants in Australia (ICAA)</td>
<td>Various providers</td>
<td>Institute organised activities, Development maintenance or expansion of professional competence, Tertiary courses, Researching and writing technical papers, Professional journals</td>
<td></td>
</tr>
</tbody>
</table>

*Self funded = payments by individual professional member
** NSW data only. Some states have compulsory continuing professional development.
Figure 6.1 Proportion of final year postgraduate coursework students receiving financial support, selected professions

Figure 6.2 Proportion of final year postgraduate coursework students given time-off by their employer, selected professions

Source: Adapted from Dean Ashenden and Sandra Miligan. Sydney Morning Herald, 12 October 2000.
Based on data from 1999 Graduate Destinations Survey conducted by the Graduate Careers Council of Australia.
Note: Professions with fewer than 10 responses to the survey are not reported individually.
Some of the courses are sponsored by the New South Wales Department of Health and attract no fees. Others are conducted through the New South Wales College of Nursing. These courses consist of three weeks (60 hours) of clinical experience and six weeks of course work. Courses are available by flexible delivery. It is interesting to note that the ‘five years recency’ practice is not mandated and no reference is made to it by the Nurses Registration Board of New South Wales. Nurses need to maintain their registration with the Board.

In accountancy, the guidelines from CPA Australia state that accountants employed in public practice, who are absent from the profession for less than five years can renew their membership. To be reinstated as a member or fellow of CPA Australia, former members or fellows must have completed, in the twelve months prior to regaining CPA status, 40 hours of continuing professional development (CPD). They must also undertake to complete ten hours of continuing professional development within six months of reinstatement. Members may be reinstated as Associates while meeting these continuing professional development requirements.

If they return after an absence of more than five years, in addition to the requirements already outlined, applicants must have their educational qualifications reassessed and additional education requirements may need to be met prior to reinstatement. Reinstatement is not automatic and is approved at the discretion of the Divisional Council. Professional conduct in the period following cessation of membership is taken into account when considering applications for reinstatement.

The Institute of Chartered Accountants in Australia (ICAA) has a similar process whereby the applicant must apply to State Council for re-admission and meet the criteria in the regulations. The Institute advises that very few members allow their membership to lapse.

In medicine, the New South Wales Medical Board operates a case by case review system for practitioners who have not practised within the last five years.

In social work, the Australian Association of Social Workers advises that the member is encouraged to continue their professional development through reading and attending seminars. At this stage there are no regulations mandating currency in social work.

Teachers wishing to return to employment in a New South Wales government school must have worked in a school during the previous seven years or hold a letter of approval to teach that is no older than seven years.129. If either criterion is not met then the teacher seeking casual employment must reapply, following the same process as a teacher applying for a permanent employment.

The re-application process involves:

- formal assessment of academic qualifications to meet departmental requirements
- assessment of personal suitability through attendance at an interview with a senior officer
- a criminal record check undertaken by the New South Wales Police Service
- an English language proficiency test for applicants who have completed the major part of their qualifications in a country where English is not the main language
- Australian citizenship or a visa which allows the teacher to work in Australia
- probity checks for teachers coming from inter-state or from non-government schools.

Non-government schools have their own employer requirements which often ‘piggy back’ those of the State employer. In New South Wales there are no mandatory requirements for teachers to update their teaching qualifications. A key question which arises: is it a professional responsibility for someone to be acknowledged as satisfactory to return to teaching, or is it an employer responsibility? In times of teacher shortage it is likely that requirements will be weakened so that there is somebody available to fill a teaching vacancy. As teachers have no professional structure they are unable to influence in any way decisions employers make about the qualifications and quality of people they employ to teach.

### 6.5 Competency standards

Generally, responsibility for the development of curriculum standards and guidelines is vested within the profession. The standards provide guidance for:

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129 NSW Department of Education and Training, Personnel Directorate Memorandum, 00/08 (S.137), Employment of casual teachers in schools, May 2000.
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- course development in universities
- recognition of overseas qualifications
- course accreditation by professional regulatory bodies
- competency assessment standards.

In the legal profession in New South Wales, the Legal Practitioners Transitional Admission Rules 1994, Schedule 5, identifies a range of topics and skills that undergraduate legal education programs must follow. These are described in Appendix 4 (Table A4.6).

In engineering, the Australian Institution of Engineers manual for the accreditation of professional engineering programs has been developed by the Accreditation Board to identify professional competency standards, the teaching and learning environment, generic attributes of graduates and programs and engineering practice standards. Programs of professional preparation must conform to the standards for accreditation. These are outlined in Appendix 4 (Table A4.7).

In social work, the Australian Association of Social Workers has developed competency standards for entry-level social workers using the frameworks developed by the National Training Board. The standards include units and elements of competency and performance criteria, as described in Appendix 4 (Tables A4.8 and A4.9).

The Australian Nursing Council has developed national nursing competencies, which form the core standards for all nurses. These standards are used by the Nurses Registration Board of New South Wales to assess and accredit courses in undergraduate nurse education. These are described in Appendix 4 (Table A4.10).

In accountancy, the Institute of Chartered Accountants of Australia has a strong accreditation program with relevant guidelines.

Although they exist in other countries, and are being developed in some other States, there are no agreed professional standards or profession-wide competency descriptions for teaching in New South Wales.

6.6 Comparisons of professional experience

Most professions incorporate practical, on-the-job experience as a component of preparation programs. In general, professional experience is linked to or integrated with formal studies and is supervised by a senior, experienced member of the profession. This experience is most frequently in the kinds of work environment where the person will eventually practice.

Quantity of practical experience

Analysis of the quantity of practical experience indicates considerable variation between professions. Figure 6.3 shows that teachers in New South Wales in their professional training have the least quantity of experience in the workplace when compared with other professions.

One-year postgraduate programs in education have the smallest component of practical experience in professional preparation when compared with any other profession. These programs generally are now regarded as inadequate and are becoming more the exception than the rule in preparing teachers.

Typically, teachers are four-year trained, with a bachelor of education or a bachelor degree and a diploma in education, or increasingly a double degree. They undertake 40 and 60 days practicum experience respectively. By contrast, nurses undertake a three-year undergraduate course of professional training, involving 90 days of clinical experience in the workplace, usually followed by a nurse graduate transition program in their initial year of employment. In completing undergraduate training, nurses typically have the opportunity for 30 per cent more on-the-job training or clinical experience than teachers, despite the fact that their degree is one year less. Social work students usually complete a minimum of 120 days of professional placement in their four-year undergraduate degree.

A number of professions have minimum mandated requirements for professional experience in pre-service training. For example, in social work the Australian Association of Social Workers specifies that pre-service training must include a minimum of 140 days of placement in two separate locations to fulfill requirements for membership of the Association.

De facto minimum standards operate in nursing. Nurse education programs offer a minimum of 90 clinical
placement days in the workplace in at least six clinical contexts of practice over the period of training. Doctors and dentists undertake a minimum of 350 days of clinical experience in a four or five-year undergraduate or graduate program. In dentistry, the amount of experience varies, being dependent on patient availability and staffing levels.

In accountancy, the Institute of Chartered Accountants in Australia advises that the practical experience is as much a function of induction as it is of pre-service training. Many accountants undertake a two-year traineeship in an accounting practice as part of their degree requirements. Acceptance into the Institute requires a minimum three years mentored practical experience before full membership and registration can be considered. De facto minimum standards also operate in law where 15 weeks of practical legal training is accepted by the Supreme Court for admission to legal practice for solicitors.

The data about practical experience in teaching, and the comparison with other professions, confirm advice to the Review that in their preparation the amount of on-the-job experience teachers have prior to employment is inadequate. Unlike most other professions which have mandated requirements, there is no minimum time set down for the professional experience component of a teacher-in-training and no professional body to determine such requirements.

In the case of teaching, new teachers are faced with a double jeopardy: the least amount of professional experience as preparation prior to employment and the greatest expectation of their level of ability to perform in the profession at entry. On appointment, they are immediately responsible for a whole class, full time. No other profession functions in this way.

Mandated minimum quantity of practicum in teacher preparation: national and international comparisons

Both nationally and internationally, a number of education employment authorities have developed minimum practicum requirements. These mandated requirements specify the minimum practical experience necessary to qualify for employment as a teacher. The requirements in some other states and overseas countries are provided in Figure 6.4.

In Australia, the duration of practicum required is different in each state and territory. New South Wales, South Australia, Tasmania and the Northern Territory have no minimum requirement. In Victoria, the Standards Council of the Teaching Profession (SCTP)\(^{139}\) recommended that all undergraduate teacher education courses should include at

\(^{139}\) Standards Council of the Teaching Profession, Guidelines for teaching education courses, Department of Education, Victoria, revised December 1998.
least 80 days of supervised teaching practice. Postgraduate teacher education courses were recommended to include at least 45 days of supervised teaching practice, with a minimum of 60 days required for P-12 courses (preparatory–Year 12).

In Western Australia, teacher education courses must include an education component and a teaching practice of at least six weeks (30 days). In South Australia, legislation requires that each teacher education course must include supervised practicum work in schools. No mandated quantity, however, is specified.

The Queensland Board of Teacher Registration specifies that practicum experiences in initial teacher education must include practicum of 100 days, 80 of which must be in schools. An example of requirements in another country is the Post Graduate Certificate in Education (PGCE), a one-year teacher education course in the United Kingdom. To be fully accredited, a teacher must complete 96 days of in-school clinical experience during their course.

Number of clinical placements across the professions

Several submissions to the Review commented on the need in teacher education for professional experience in a diversity of settings. Diversity in this context can refer to the geographic locations of the practical experience and to the age and background of students encountered. Increased time in a clinical setting provides more opportunity to experience different placements.

Typically, student teacher practicum experience comprises two to three school placements. This is similar to social work, engineering, and dentistry. However, in social work and dentistry, hospital and community placements provide the opportunity to work with a much broader cross-section of society, most often from diverse geographic and social backgrounds than student teachers would ordinarily encounter in their placements. As a result, their clinical experience more readily mirrors the initial employment conditions they will encounter. Currently, doctors and nurses have the opportunity of working in a series of at least six different clinical settings in a range of hospitals and health care facilities. Proposals have been developed so that student doctors and dentists include a rural placement in their experience. Figure 6.5 provides information about the number of clinical placements across the professions studied. The evidence indicates that the opportunity to encounter a diverse geographic and social population is much less evident in the practicum in teacher preparation programs compared to some other professions, unless it is specially planned for.
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Figure 6.5 Number of practical placements in different professional courses in New South Wales

Because most other professions have a much more gradual induction into undertaking full professional responsibility, the diversity of experience provided is an important base upon which first employment and induction can rest. This diversity would be ideal for teaching, because a teacher is expected to be fully competent on employment. The professional experience undertaken prior to the first appointment as a teacher needs to be as similar to the employment setting as possible. There should be a more gradual induction into the full teaching responsibilities of employment, if preparation for the profession is to be the guide.

Unless employers are able to provide this induction, then the diversity of field experience must be traded for priority to be given to teaching experience as close to that to be encountered in first employment. There are too many examples of young teachers being quite unprepared for the settings in which they found themselves on first appointment.

6.7 Costs of practical experience across the professions

Providing practical experiences in any professional preparation is expensive. Four main types of costs are incurred.

- **Fieldplacement units**: based in the tertiary institutions, these units arrange for the organisation of professional experiences in a workplace environment.

- **Tertiary supervision**: universities usually provide a supervisor to assess the competencies and skill development of professionals in training. The supervisor establishes liaison with workplaces, monitors student progress and assesses competencies, standards and most statutory and other requirements. The universities often employ experienced casual staff as supervisors.

- **Workplace field education units**: Schools, hospitals and professional practices allocate staff to assist in field education. Usually this cost is met by the professional workplace.

- **Other professionals providing workplace supervision**: Indirect costs arising from the involvement of a range of other professionals from registration agencies, government accreditation authorities and government and private agencies are also involved in developing practicum and supervision plans.

Appendix 4 (Table A4.11) details costs of practical experience across the professions.
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All professions, except dentistry, operate field placement units, at significant cost to those faculties involved in professional training. Dentistry uses existing infrastructure, and placements are supported by local dentists.

Tertiary supervision of students undertaking professional experience is also a significant cost, a variable dependent on the number of students in professional workplaces. A current trend to limit tertiary supervision costs is to reduce the amount of university supervision and increase the responsibilities of professionals providing it in the workplace.

Of all the professions reviewed, only teaching provides significant payments to professionals offering workplace supervision. Information about the Award governing payment to the cooperating teacher is provided in Appendix 4 (Table A4.12).

Responding to funding constraints

Reducing costs and increasing the cost effectiveness of clinical placement is a continuing theme in all professions.

In nursing, a crucial role in professional clinical experience is played by Clinical Nursing Supervisors. These are hired and paid by the university and faculty. They are registered nurses usually on leave, retired or working part-time whose role is to:

- facilitate pre-service nursing student placement
- manage the hospital placement
- assess trainee progress.

Often the nurses have strong informal links with the nursing unit manager and other hospital staff. They manage experience for pre-service nurses at a ratio of 1:8. The cost to universities of clinical supervision fees for each group of eight pre-service nurses for a 28-hour hospital week is approximately $1,000. The average cost of clinical supervision fees per student over the three-year life of a course is $2,250.

There is a perception that the supervision ratio of 1:8 has changed over time. Universities are focusing on reducing the cost of clinical components of their programs. For universities, the future in nursing is seen to revolve around attaching clinical experience to teaching hospitals to take advantage of the extra resources they may have available.

Currently, postgraduate nurse education is located in these hospitals and negotiations are proceeding to extend this to pre-service training.

The trend to reduce the amount of university supervision and increase the responsibilities of professionals providing workplace supervision in nursing is not based solely on cost savings. Another consideration is changes in health care delivery models and the organising of clinical time and supervision so students can better meet the objectives of particular units.

6.8 Models of partnerships in other professions

Integrating theory and practice: partnerships across the professions

Practical experience is an integral component within most professional courses as graduates are increasingly expected to undertake defined professional roles.

Generally, accepted goals for the practical experience in professional programs include:

- giving students insights into the professional world and assisting them to adapt to the work environment
- developing professional skills
- developing professional values and attitudes
- developing interpersonal and social skills
- linking theory to practice
- enhancing employment prospects of graduates.

Practical experience is expensive to administer, requiring significant academic time in arranging placements, maintaining liaison with host organisations and supervising neophyte professionals. The traditional model of practical experience, under direct supervision of professionals, is becoming increasingly difficult to provide due to limited availability of placements and financial constraints in universities.

Many submissions to the Review made reference to the structure and organisation of professional experience. In particular, submissions called for:

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131 L. Girgis and M. Thomas, Off campus education activities of the University of Canberra: Practical experiences in professional education, 1999.
incorporating the practicum as the focal point of student learning
integrating the practicum into the curriculum of the teacher education course
immersing practicum students in a culture of ‘best teaching practice’
integrating the practicum over the full period of the course.

These comments reflect perceptions that the structure, organisation and quality of professional experience in teacher education all need to be improved. As well, the comments recognise the cost and difficulty of providing the practicum. There are two conflicting views: a new professional in training makes extra work in the workplace, contrasted with their providing an extra pair of hands to help. Both are no doubt true, but effective models of professional experience will limit the first and exploit the second.

All professions agree that linking university and field components are highly desirable and that effective learning on campus is dependent on associated and clearly inter-related learning in the field. Achieving these outcomes, however, requires a careful integration of theory and practice.

University training and professional education requires universities and the profession to develop partnerships to provide relevant and effective professional experience. To date in teaching this has not been achieved to the necessary extent.

The Teaching Hospital Model

The structure and organisation of professional placements in teaching hospitals were examined to illustrate how the medical and dental professions integrate theory and practice. The most striking aspects of medical and dental professional and clinical experiences are the quantity and quality of provision (Figure 6.3).

In dentistry and medicine, both professional and clinical experience takes place in teaching hospitals which are jointly funded by universities and the New South Wales Department of Health through Area Health Services.

The teaching hospital model integrates theory and practice. These teaching hospitals have:

- medical and dental pre-service education centres
- lecture theatres and classrooms
- teaching materials
- specialised education staff who are coordinators and lecturers in a medical speciality
- joint provision, use and access to medical and dental facilities
- medical and dental education courses.

Appendix 4 (Table A4.13) sets out the model for the State Dental Hospital.

Teaching hospitals have been established and funded to structure, develop and operate clinical experience and education to pre-service medical and dental practitioners.

In medical and dental education, the courses of training in many cases involve a structured clinical experience as outlined in Appendix 4 (Tables A4.14 and A4.15).

Teaching hospitals have joint academic and hospital staff appointments including clinical academics, professors, lecturers and clinical educators. They operate medical education through:

- problem-based learning
- clinical attachment
- presentations
- practical rotations in wards
- lectures and seminars.

In a teaching hospital, teachers include hospital staff, specialists, registrars, general practitioners, medically qualified researchers and visiting medical officers (VMOs). Registrars and visiting medical officers are expected to teach. Teaching is included in the employment contract for staff specialists. There is a strong ethic in medicine to provide training to the profession. It is interesting that such an approach is identifiable in films and television shows about medicine, but never in those about teaching.

In medicine, teachers are appointed jointly by the hospital and the university. Some teachers are academics, and their salary is paid by the university. There are instances where a small proportion of salary is paid by the hospital. Clinical academics, including professors and associate professors, may be funded by universities. Visiting medical officers generally are not paid by the university. When general practitioners assist with teaching they are paid a
casual rate by the hospital. Employment arrangements are
different in each hospital and also vary depending on the
policies of the Area Health Service managing the hospital.
Some joint employment arrangements are set out in
Appendix 4 (Table A4.16).

In dentistry there are memoranda of understanding
between the university faculty and the various clinical
teaching institutions. The memoranda include dental
hospital staffing and management organisation. Academic
teaching staff can also be appointed as honorary staff in
a teaching hospital.

In dentistry there is a commitment of care. The profession
has developed a sophisticated nomenclature for honorary
and volunteer teaching and clinical supervision. These
include:

- honorary associates
- clinical associates
- specialist clinical associates
- clinical professor
- adjunct associate professors.

These titles are an enticement, in part, for professionals to
assist in the training of students without receiving
payment. The individual receives a career progression
within an honorary framework. In relation to funding, it
is difficult to identify separate funding sources because of
the joint funding arrangements between universities and
Area Health Services. Basically, teaching hospitals are
funded in three ways:

Teaching grants. The hospitals receive a teaching grant
based on the number of students. Private hospitals are used
for training but they receive no separate funding allocation
from Area Health Services.

Fund raising. Lecture theatres are hired out to assist with
the payment of staff salaries. Equipment is refurbished
through university and hospital funding and donations from
charities. Donations from private organisations, for example,
the New South Wales Cancer Council, also contribute.

Professional development courses. These are conducted for
ongoing professional development of medical staff and
students and provide a source of revenue.

The social work model

Social workers regard field training as a significant
component of professional preparation. It is the cornerstone
of the requirements for professional education in New
South Wales universities. After an initial orientation in first
year, students undertake practicum subjects totalling 140
days during their degree.

Social work students are placed with social workers in a
range of settings where they are exposed to the complexities
of professional practice in health, welfare and community
service organisations. In line with all professional
education, links are continually made between classroom
learning and field experience. Students generally regard the
field education component of the degree as the single most
significant aspect of the course.

The nursing model

The operation of clinical experience is conducted as a
partnership between the faculty of nursing, the hospital
ward and its Nursing Unit Manager (NUM) and Clinical
Nursing Supervisors.

Nursing Unit Managers manage wards on a shift by shift
basis for registered nurses. The final legal responsibility
for patient care rests with these hospital staff. Pre-service
nurses undertaking their Bachelor of Nursing must be
under the direct supervision of a clinically registered
employee in the performance of their training duties. On
any ward, two pre-service nurses only can be accom-
modated at any one time. Hospital staff and registered nurses
are not paid by faculties of nursing or their hospitals or
Area Health Services for their roles in training.

Hospital staff may have attended mentoring or training
programs but there is no formal link between the
university, pre-service nurses and training staff. A
perception exists that the move away from hospital located
nurse education has led to a loss of ownership of pre-
service training by the hospital nurses. Also, at any time,
a range of pre-service nurses from different years and
different faculties are training on wards, preventing closer
relationships between trainees and registered nurses.

During the pattern of clinical experience in the Bachelor
of Nursing, pre-service nurses would usually have the
opportunity to work in six hospitals. It is recommended
that nurses be exposed to a wide variety of hospitals and clinical experience. The broad range of medical and surgical experiences in a general hospital are seen as very valuable. Most wards in teaching hospitals are highly specialised and therefore offer only specialised experience.

The usual pattern of clinical experience, separate to clinical simulation, in a three-year Bachelor of Nursing is set out in Appendix 4 (Table A4.17). By way of contrast, the structure of industrial preparation in engineering is shown in Appendix 4 (Table A4.18).

6.9 Comparisons across the professions

Size

Teaching is the largest single occupational category in industrial statistics. In New South Wales there are almost certainly more than 80,000 qualified teachers, including those not in full-time permanent positions.

By contrast, data from the 1996 Australian Bureau of Statistics indicate that there are over 50,000 nurses currently practising (90,000 registered), over 31,000 engineers, 15,000 medical practitioners (23,000 registered), 2,700 dentists and 9,000 social workers.

The Law Society of New South Wales advises that there are 15,700 registered practising solicitors in New South Wales and every year approximately 900 new registrants. The Institute of Chartered Accountants in Australia estimates that there are 55,000 members of professional accounting associations in New South Wales.

Nursing is the one profession approaching teaching in the large numbers involved and if all the professions working in the health sector were totalled, it would approach the number of teachers. In 1999, the Nurses Registration Board of New South Wales processed applications for over 2,000 enrolling nurses, whereas over 3,000 potential teachers completed applications with the Department of Education and Training.

The main difference is that health is highly differentiated, whereas teaching is much more mono-professional. A consequence is that teacher educators tend to focus on the numbers involved rather than their quality. A focus on quality in most other professions is significantly more in evidence than it is in teaching.

Rise of para-professionals

A stark contrast between teaching and other professions has been the rise of para-professionals in other professions. As the knowledge and procedures in other professions have increased, specialisation has developed. Specialised roles have evolved for para-professionals who offer specific services within a profession. Conveyancing in law, dental hygienists and therapists in dentistry are examples of new occupations that have resulted from increased specialisation.

In education, teachers’ aides and Aboriginal Education Assistants fulfil somewhat similar specialist roles. One of the recurring themes in the reviews and renewal of other professions is the role of para-professionals and their relationship with fully accredited and registered specialist staff. Teaching has not been affected to the same extent by increased specialisation and new relationships which have arisen as a consequence in other professions.

Salaries

The issue of teachers’ salaries was raised during the course of the Review. Views were put that:

- teachers salaries need to be at a level which makes the profession an attractive career, relative to other professions, vocations and occupations
- the declining status of the profession is in part accounted for by the perceived decline in teacher salary levels on a comparative basis over the past 20 years
- present remuneration structures do not differentiate teachers on the basis of performance and are not sufficiently linked to a credible professional accountability process.

While the evidence about comparative salary movements over the past decade in relation to average weekly earnings should be noted, account needs to be taken that over this period the general skill level of the workforce rose, resulting in an overall higher salary level. Additionally, teachers generally maintained or improved their conditions and were substantially unaffected by the significant restructuring which occurred in many other professions, vocations and occupations.
### Table 6.6 Typical recruitment pattern in government schools and nursing

<table>
<thead>
<tr>
<th>TEACHING</th>
<th>NURSING*</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Final year – Bachelor of Education</strong></td>
<td><strong>Final year - Bachelor of Nursing</strong></td>
</tr>
<tr>
<td>Graduate Recruitment Program information sessions, March – May.</td>
<td></td>
</tr>
<tr>
<td>Application for employment submitted for Graduate Recruitment Program, April – July</td>
<td>Graduate Nurse Recruitment Consortium Recruitment Program information sessions (GNRC)</td>
</tr>
<tr>
<td>Interviews for Graduate Recruitment Program</td>
<td>Graduate Nurse Recruitment Consortium Information sessions (GNRC)</td>
</tr>
<tr>
<td>Conditional casual approval at conclusion of internship (Term 3)</td>
<td>Applications for employment submitted to the GNRC. Interviews for employment in public hospital system by the GNRC. (This is one of a number of recruitment strategies.)</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Final transcripts received by Department of Education and Training from the universities. Letters of approval to teach are issued.</td>
<td>Final successful transcripts received by Nurses Registration Board New South Wales from the universities. Registration numbers are issued with an authority to practise.</td>
</tr>
<tr>
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<td></td>
</tr>
<tr>
<td>a. Appointed to DET – 12 months probation</td>
<td></td>
</tr>
<tr>
<td>b. Employment as a casual teacher</td>
<td></td>
</tr>
<tr>
<td>c. Listed on database for future employment</td>
<td></td>
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<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Information was gathered about salary structures in other professions, and how these structures relate to promotion and career prospects.

In law, salary is related to years of practice, the size of law firm and the type of practice; for example, family law or corporate law.

In government employment across the professions of nursing, medicine, social work and teaching, salary and professional progression is similar. The details are set out in Appendix 4 (Table A4.19).

It should be noted that in the private sector there is opportunity for individuals in the professions studied, including teaching, to earn considerably more than that listed.

Teachers in government schools who successfully complete their probationary year and are awarded a Teacher’s Certificate, have a salary increment of $1800 per year which ceases after eight years\(^{132}\). This salary bar is roughly the same as other professions in public service. Given the age structure in teaching, the majority of current teachers have reached the highest salary increment level.

Many other professions have a greater opportunity to receive fee-for-service than do teachers. But this is changing, with for-profit providers of education moving into the industry and more and more teachers setting themselves up as small enterprises to help people learn. This trend is likely to continue and preparing teachers for such possibilities must be given greater attention by universities.

\(^{132}\) Based on salary scales as at 1 January 1999.
### Table 6.7 Typical induction pattern in teaching in government schools and nursing

#### TEACHING

School based induction program – includes half day release time from class in some districts. Non-mandatory support sessions conducted by District Office after school hours.

On-going assessment for Teacher’s Certificate based on: teaching skill, interpersonal relationships and professional and personal qualities. Formal assessment by supervisor or Principal* - includes observation and written report.

Casual teachers must provide evidence of 195 days teaching experience within the previous 18 months which must include one full term in the assessing school.

Teacher’s Certificate issued.

*If unsuccessful, the probation period can be extended and an improvement strategy introduced.

#### NURSING*

Graduate Transition Program – program varies across hospitals but can involve a five day orientation, and a three day workshop.

Health service based induction program involving a variety of models. Usually a structured 6-12 month orientation program with clinical supervision and on-going assessment (surgical, medical and speciality area).

#### Recruitment and induction patterns – teaching and nursing

The Review compared recruitment procedures for teachers in government schools and nurses in public hospitals. The recruitment procedures are broadly similar. Information about these procedures is provided in Table 6.6.

Representatives from the Graduate Nurse Recruiting Consortium (GNRC) and representatives from the New South Wales Department of Education and Training visit the university sector to conduct information sessions during the academic year. Offers of employment are made by the Consortium at the conclusion of the academic year, whereas in teaching offers for employment in government schools are not made until the January of the following year. It should be noted that not every hospital uses the Consortium for the recruitment of nurses.

The recruitment and induction procedures in nursing have been developed for both public and private sectors, unlike teaching. The induction processes are significantly different. The nursing system includes a more highly structured induction process over the first year of nursing.

Hospitals, like schools, have flexibility in using their resources to develop induction programs. The Area Health Services provide significant funds for the induction process.

Advice was provided during a visit to a hospital that the New South Wales Health Department contributed $900 towards staff development for each person employed at the hospital. The majority of this funding was used in resourcing the hospital induction program.
CHAPTER 4 Professional Education

A number of submissions to the Review commented on the low level of professional development funding made available to schools irrespective of sector, and how important such activity was to the growth and success of a teacher.

Induction

Information was gathered about induction in teaching and nursing. Induction practices in teaching employment vary widely within jurisdictions and from employer to employer. They are described in general terms in Table 6.7 for government school teachers and nurses.

Induction into nursing is far more structured. After graduation, many nurses undertake the nurses graduate transition program (NGTP). Although not compulsory, the program is undertaken because it consolidates what the nurses have learned at university and offers them a greater range of experiences. The program involves a structured rotation, with clinical supervision in a range of areas. These are usually surgical, medical and a specialty area. There is no salary benefit for participating in the program; a graduate nurse is paid a full salary, but the graduates experience a broader range of nursing and so are considered more employable. The program duration is between six months and one year. A graduate nurse also has the support of a preceptor. The preceptor is a resource person based in each ward who undertakes a mentor role to the graduates. If the preceptor is busy, the graduate can always ask a clinical educator to assist them. Experienced nurses can attend training courses to become a preceptor through the nursing and clinical support services of a hospital.

There are several orientation models, ranging from a formal, structured program to ones that are self-directed or individually tailored. In one hospital visited, the orientation program for graduate transition nurses involved up to eight days of support and training. Initially, the nurses participate in a three day orientation program to become familiar with the hospital environment, policies and equipment. They spend the fourth day on the ward, where there is a focus on the supply and issue of medications. On the fifth day the recruits regroup to discuss any unresolved issues and ask any questions.

In the second week, the nurses spend two days on the ward, shadowed by a registered nurse and by the third day they are given their own patient load. If a nurse is not coping, the load could be reduced from the normal six patients down to as few as two patients. At night, the load could be up to 12 patients.

The hospital, in conjunction with the nursing profession, conducts mandatory courses covering topics such as evacuation procedures, resuscitation and safety. Training is also provided to improve the broader knowledge base: update on HIV, managing pain and cross-cultural issues. The nursing and clinical support services also offer courses to assist the hospital meet the Australian Council of Healthcare Standards. The Council sets clinical indicators against which hospitals can measure their clinical performance. They have been designed as a measurement tool to assist in assessing whether a standard in patient care is being met.

The hospital conducts a number of compulsory programs for all except medical staff. These cover a range of topic areas including waste management, child protection, and protocols for dealing with aggressive incidents. The courses are conducted twice a month with up to 200 people attending each session. The nursing and clinical support services unit is responsible to maintain a register of the people who have attended the courses.

Unlike nursing, teaching does not have the strength of an organised profession to back its processes for induction and entry into both employment and the profession itself. ‘Sink or swim’ was mentioned often as the process a new teacher had to endure, rather than limiting the load to more manageable proportions which is the case in nursing. For a nurse not to be coping can be a matter of life and death for their patients. For a teacher not coping, the effects on individual students in the short-term are largely hidden, but can have devastating effects on their future in terms of learning and employment prospects.

6.10 Reviews in other professions

Teaching is the most reviewed profession in Australia. As outlined in chapter 4, since 1980 there have been 20 significant national and state reviews of teacher education. The most common characteristic of these reviews has been
the lack of action on their recommendations. This situation contrasts markedly with other professions.

For instance, three major reviews of engineering education were conducted between 1988 and 1996. Furthermore, these reviews were followed up with three subsequent evaluations to ascertain progress on the implementation of the recommendations.

The 1996 review into engineering education was conducted by the Institution of Engineers Australia (the profession), the Academy of Technological Services (the scientists) and the Australian Council of Engineering Deans (the universities).

The primary aims were: to examine, report upon, and make recommendations relating to the evolving structure of engineering education in Australia primarily at professional level, but with due regard to the increasing importance being placed on articulation, recognition of prior learning and continuing education. As the Review developed, it became necessary to plan for a smaller, complementary review to address the education provided for engineering associates and engineering technologists. This review is now being formulated by the Institution of Engineers, Australia[12].

Nursing education is reviewed regularly by State authorities. Universities are subject to compliance reviews and the Department of Health has carried out many workforce studies which involve the training of registered nurses. The Nurses Registration Board of New South Wales has undertaken research and held seminars, the most recent focusing on the requirements for accreditation of courses leading to registration. In 1997, the Department of Education, Training and Youth Affairs commissioned a national review of specialist nurse education as a result of continuing growth of medical and scientific knowledge increasing the range and depth of specialist skills required of nurses. It can be argued that legal education is under on-going review as both the New South Wales and Australian Law Reform Commissions and The Law Society of New South Wales have been established to manage and conduct professional education of legal practitioners. The Law Society of New South Wales undertakes continuous reviews which inform the development of education in the legal profession. Comprehensive reviews have included the 1987 Pearce Report on Australian Law Schools, conducted for the Commonwealth Government, and a study in 1992 to review Australian Law Schools as a follow-up to the Pearce Report. Undergraduate legal education and admission to practice have been continuously and constructively reviewed.

Teaching contrasts markedly when it is considered how greatly other professions have been influenced by review recommendations, and how little impact recommendations from reviews have had in teacher education.

6.11 Conclusion

A number of conclusions can be drawn from comparisons between teaching and other professions. Particularly:

- professional associations provide most other professions with a sense of identity as professional practitioners which is difficult to find among teachers
- while the level of self-regulation varies in other professions, it is non-existent in teaching
- entry into and remaining in teaching is a matter for the employer to decide, as distinct from practice in many other professions where a professional body also has responsibilities
- most professions have explicit further education requirements or have a culture where further learning is valued; by contrast this is much less true of teaching
- professional experience is at the centre of pre-service training and is much more highly valued in most other professions than it is in teaching
- the quality of professional experience in teaching indicates the low priority attached to the level of engagement of the profession in the preparation of teachers, a level much lower than for other professions
- in most professions, responsibility for preparation and induction of new members is viewed as a significant professional responsibility; such a view does not strongly characterise teaching

educators in other professions, but particularly in health, traverse the boundaries between their own professional practice and their role as a teacher or educator; such a situation is not reflected in teacher education.

Structures and practices in other professions provide clear models for teachers in their quest to become fully professional. Teachers receive academically at least the equivalent level of training as do other professions. They have one of the most responsible jobs in our community, namely the education of our next generations. The level of skills required is at least the equivalent of other professions.

There is no doubt that the content of teachers’ work is professional; they must move to act from professional principles rather than the requirements of arbitrary rules as determined by employers or negotiated with unions. Only in this way will a strong culture of professional initiative be established.

To go down the route of establishing a formal profession of teaching raises issues related to restriction of trade which must be addressed. These issues apply, however, not only to teaching but to other professions and vocations as well. In teaching, the widest diversity of people should be allowed to enter the profession and, provided that they can demonstrate acceptable levels of skill, be allowed to practise and receive appropriate designation as a professional teacher.

No employer really wants to deal with a profession as separate from a union. They prefer not to deal with a union either. Yet, in the way a union looks after the industrial interests of its members in negotiation with employers, a profession looks after the professional interests of individuals in our community so that the contract of the practitioner with the public is duly honoured by those practising.

Nor is a union likely to embrace warmly a profession involving its members. It will lose some authority as power shifts from collective action for the good of the group to individual action for the good of the clients. Nonetheless, it is clear that a move away from the often adversarial conflict between employer and union that too often obtains in New South Wales will bring benefits to teachers and to students. A three-way balance of interest between the profession, the employer, and the unions will be to the best advantage of the young people of the State and of teachers themselves.

A profession also limits employers in terms of who they can employ to undertake certain professional tasks. This is essential in other professions, so why not teaching? For so long as class size determines the number of teachers, there will always be people employed to teach who should not be given professional accreditation. But this is true of other areas: engineering and accountancy have a range of people doing their kind of work under the supervision of a professional. So can it be with teaching.

Teachers must ask themselves whether they want the responsibilities now held by their employers to decide who should be a member of their profession. And, where there is a vacuum in terms of educational debate, do they want it filled by their union where major responsibility has to be to its members, rather than to the students they teach and the community at large.

Increasingly, the education sector will be divided into smaller enterprises, individual practitioners, and people who work across a range of schools. Where previously there were few employers, a professional organisation seemed to matter less. Now teaching must have a professional voice, comparable with that of other professions to serve the interests of teachers and their clients.

It is clear that teachers are unable to establish their own profession. Most attempts in the past have fallen on stony ground, both here and overseas. It is for government, in the interests of the State and including the children and young people, to do so to give teachers an opportunity to take up their individual professional responsibilities separate from either the dictates of their current employer or their union.

The test as to whether teaching has become a profession will come when an advertisement can be placed, similar to the one CPA Australia placed recently on behalf of its accountant members.

“When it comes to business, you can ask us anything”.

Teaching will be a true profession when, through an organised structure, teachers are able to say:

“When it comes to education, you can ask a teacher anything”.

ACTIVIST PROFESSIONALS AND PROFESSION-LED CHANGE
PAPER 2

Professional regulation &
professional autonomy:

Benchmarks from across the professions –
The New South Wales experience

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A worldwide standards movement in teaching is leading to the development of new standards mechanisms and accountability procedures. So far this development has been uninformed by research on the operations of standards mechanisms and accountability in other professions. In other professions the development of new accountability processes and procedures are often in conflict with the professional autonomy that constitutes the core of professionalism, professional identity and professional practice. Moreover, research on the development of such mechanisms across a range of professions has raised issues of professional autonomy, freedom and the very meaning of professionalism. This research serves as a warning that the path to the professionalisation of teaching will be neither simple nor easy to negotiate.

Using the conceptual model of deprofessionalisation, reprofessionalisation and professionalisation developed by Mahony and Hextall (2000), this paper reports on the relationships between professional regulation and professional autonomy. It analyses the operation of professional disciplinary procedures and mechanisms in a range of professions. The findings of this research show that many professions have maintained aspects of professional autonomy by developing peer review as the basis of professional disciplinary mechanisms.

Professionals accept that peer review remains the core of professional discipline, and the basis of professional autonomy. Despite trends to question peer review, to widen the role of State regulatory agencies, and to support peer review with consumer and lay agencies, all professions except teaching have developed misconduct procedures which have judgement by professional colleagues at their core.

"Public perceptions of a profession will be governed by the way discipline is seen to be applied and enforced in a profession" Daniel 1995
INTRODUCTION

Questions of accountability and autonomy have formed a strong element in discussions of professionalism in recent times. For some professions this has meant developing new accountability mechanisms. For other professions this has meant the modification and strengthening of existing procedures. In teaching for example, a worldwide standards movement is leading to the development of new accountability procedures. In professions like law and medicine, the peer review system in terms of which practitioners were responsible only to their fellow practitioners for their professional conduct and actions, has been increasingly modified and augmented.

The development of new accountability processes and procedures are often in conflict with the professional autonomy that constitutes the core of professionalism, professional identity and professional practice. Moreover research on the development of such mechanisms across a range of professions has raised issues of autonomy, freedom and the very meaning of professionalism. This research has generated discussions about “deprofessionalisation” and “reprofessionalisation” (Mahony and Hextall, 2000) and the role of accountability mechanisms in developing conceptualisations of professionalism. While most research on accountability is concerned with the development, implementation and introduction of professional standards, research in the United Kingdom in particular, has indicated that the imposition of such standards leads to loss of morale, initiative and professional pride (Mahony and Hextall, 2000, p58). This serves as a warning that the path to the professionalisation of teaching will be neither simple nor easy to negotiate.

Enhancing standards however, is only one dimension of attaining professional status. The other concerns the operation of accountability procedures within the profession and this has attracted much less attention. In particular there has been little research aimed at comparing accountability processes and regulation across professions in an attempt to analyse core practices that may provide insights into best performance and process practice.

All professions face the problems of ‘unprofessional behaviour’, ‘professional misconduct’, ‘negligent performance’ or ‘inappropriate activity’ however these may be defined in that profession. In fact one of the characteristics of a profession is that it will attempt to define ‘deviant’ professional behaviour and develop accountability mechanisms for response on behalf of the profession. Many professions regard these accountability procedures as an important part of the social contract they share with the public. In this contract professions emphasise a commitment to high quality professional behaviour and sanctions on unprofessional behaviour in return for the privilege of self-regulation. In return the community grants a high degree of autonomy to the profession and accepts that its practitioners are worthy of high status.

This paper will explore the relationships between accountability processes, procedures for unprofessional practice and the role of professional autonomy. It will compare developments in accountability procedures in professions like law,
accounting, engineering and the allied health professions of medicine, nursing and dentistry. The developments in these other professions will applied to the current research and trends in the development of standards and accountability procedures in teaching and education.

Accountability in the professions has always been based on the notion of peer review of professional misconduct, in terms of which professionals are seen to be accountable first and foremost to their fellow professionals and then accountable to the clients and consumers their profession serves.

Even though new accountability procedures in dealing with professional misconduct have been developed in major professions (often involving external state agencies), rather than being diminished, the notion of peer review implicit in professional autonomy has been institutionalised, strengthened and reinforced in many ways. For some researchers these processes constitute the core of “reprofessionalisation” – redefining the nature of contemporary professionalism to account for changes in social, political and economic contexts. In contrast, the standards movement in teaching has yet to consider the role of professional autonomy in the successful operation of accountability procedures.

PROFESSIONALISM AND PROFESSIONAL AUTONOMY

The word “profession” is currently used very widely but also loosely. To do something “professionally” usually means to do it well, and this can be applied to anything from arranging flowers to assassination. In sport, a professional is someone who is a paid full-time worker, as distinct from an amateur who is not only unpaid but also seen to be much less skilled.

In sociological definitions of professionalism, the understanding of ‘profession’ is much more conceptually refined. A useful recent discussion of sociological conceptions of professionalism have been put forward by Matheson (1998). In this literature, professionalism applies to certain occupational categories subject to State regulation which controls the occupation’s qualifications and their standards of practice and misconduct procedures. In practical terms, professions such as law, medicine and engineering are commonly described as “professional” since there is a shared understanding that they meet these criteria.

Since regulation seems to be an inhibitor of free action, it seems strange especially that in an era which favours deregulation, attaining professional status remains the “holy grail” of many occupational groupings. The reason is of course, that the State remains the ultimate source of societal legitimacy, and therefore State regulation confers a corresponding legitimacy on the regulated group. State licensure moreover, seems to guarantee high operating standards and that in turn confers significant market advantages on that group. Those professions conforming to these processes, are seen to have high status deserving of high economic rewards. In some analyses these market advantages are the main driving forces behind efforts to establish professional
regulations which can influence market supply and demand for professional services (National Competition Council 2000). Hoyle and John (2000, p16) term this process “professionality”, the exercise of specific knowledge, skills and values on behalf of clients, legitimated by the State.

While most occupations (plumbers, electricians, hairdressers, motor mechanics, aircraft pilots) are regulated by the State in the manner described above, only a few enjoy what are commonly understood as having “professional status”. A basic benchmark of professionalism is the acceptance, operation and recognition of professional autonomy. That means that while operating under State regulation, the profession controls its own affairs and is alone empowered to mediate aspects of professional behaviour in working with clients, the public, other professions and governments. Furthermore, in the words of Daniel:

Autonomy, based on knowledge claims, definitively expresses the power of a profession to control its field of work and its own reproduction. Professions control the criteria for entry, the lengthy educational training, registration, and standards of practice conduct within the profession. (p.63)

The profession does not do this on its own and indeed has little power to do so. The power is based on State legitimation in the form of legislation, which establishes statutory authorities to control and regulate the profession. While established by the State, the internal operations procedures of these bodies are undertaken by members of the profession itself. Examples in the legal profession are the Law Society (responsible for solicitors) and the Bar Council (responsible for barristers), while in medicine, regulation is carried out in Australian jurisdictions by Medical Boards. These Boards enjoy a unique status among the vast number of statutory authorities in that they have a high degree of autonomy in relation to Government. In particular, their internal operation and procedures are undertaken by members of their profession. Critics of these types of Boards argue that they are virtually unaccountable to the governments, which gave them their power in the first place.

In this way, professional autonomy exercised on an institutional basis, protects and reinforces a second very important aspect of professional identity and status, that of the autonomy of the individual practitioner. In Medicine, doctors expect that they will be free to make judgements, decisions and offer treatment based on their training and skill, without reference to other professionals or bodies. While this does not exclude consultation with others, professional autonomy means that the decisions to consult and the results of consultation are at all times under the control and direction of the autonomous professional. Hoyle and John (2000, p16) argue that the attempt by teaching to develop standards, self-governing bodies and the new institutional status can be called “professionalisation” – as a semi-profession increasingly meets the alleged criteria of a full profession.
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However this paper will analyse the neglect of autonomy, a vital component of professionalism in the development of standards in teaching. This analysis will concentrate on the evaluation of accountability in practice.

THE DEVELOPMENT OF AUTONOMY

Autonomy has consistently been seen as a component of medical practice. Autonomy in medical practice has been the benchmark for the conceptualisation of autonomy in other professions. When the first proto-regulatory body, the Royal College of Physicians was established in 1518, it differed from the guilds which also operated under Royal Charters, in that it was allowed to operate autonomously (Pelling, 1998). This established a tradition of autonomy, which in modern times, has been well encapsulated by Freidson (1970) who argued that professional autonomy was justified by three claims:

First, the claim is that there is such an unusual degree of skill and knowledge involved in professional work that non-professionals are not equipped to evaluate or regulate it. Second, it is claimed that professionals are responsible - that they may be trusted to work conscientiously without supervision. Third, the claim is that the profession itself may be trusted to undertake the proper regulatory action on those occasions when an individual does not perform his work competently or ethically. The profession is the sole source of competence to recognize deviant performance, and it is also ethical enough to control deviant performance and to regulate itself in general. Its autonomy is justified and tested by its self-regulation (1970 p.137).

The ‘control of deviant performance’ is considered to be extremely important because it is recognised that the type of autonomy exercised by the professions can be dangerous because it can also imply non-accountability (Wolinsky, 1993). As Freidson points out, professions usually claim that they believe strongly in accountability and that a consciousness of the need for accountability permeates their day-to-day decision making. Thus, those who fall short of professional standards and/or ethics will be subjected to disciplinary or correctional action. In extreme cases, erring or negligent professionals will be disbarred from further practice, something which amounts to an occupational death sentence. While de jure such discipline is enforced by a State agency, i.e. the statutory authorities mentioned above, the de facto situation is that those professional regulatory mechanisms are invariably controlled by the professions themselves. Thus professional discipline can be seen to be exercised in terms of peer review.

Despite the high ideals however, peer review has all too often seen to become mere peer protection. Professionals have proved extremely reluctant to censure or discipline their fellow professionals. Thus, as far back as 1902, George Bernard Shaw described professions as “a conspiracy against society” while in 1990 even Freidson conceded that “professions have been much too reluctant to judge their fellow professionals” (p.441).

This perception has led in recent years to moves which might seem to be a significant curb on the autonomy of professions, in that outside “lay” bodies have been brought into existence to help enforce professional discipline. Such is the case for instance, in health,
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every State and Territory in Australia now having health complaints mechanisms, which are
themselves statutory authorities, and which can call all medical professionals,
including nurses and alternative practitioners, to account for actions that have caused
harm or hurt to their clients.

RESEARCH METHODOLOGY

The research reported in this paper was developed in two ways using different
methodologies. In the exploration of unprofessional conduct procedures across the
professions a study was conducted to analyse

- Comparative information on how different professions structure, manage and
  organise procedures for accountability and professional misconduct;
- The role of professional associations in the accountability process;
- The role of government bodies’ accreditation, registration and licensing as they
  relate to accountability.

This study utilised public documents published by a range of professional associations.
These documents were subject to analyses and a series of questions that formed the basis
of a structured interview was developed. Structured interviews were then conducted
with the leadership of professional associations across the professions. Part of this
research was conducted as part of the report of the New South Government Review of
Teacher Education (Quality Matters, 2000).

Subsequent interviews and discussions were conducted in 2001 after the Review of
Teacher Education had completed its findings. Subsequent to the Teacher Education
Review, a series of case studies were developed from these interviews to validate the
research on the operation of professional associations in the accountability process.
Those professionals contributing case studies were surveyed as to their perceptions about
professionalism, professional autonomy and the operation of professional misconduct
procedures in their profession.

DEALING WITH UNPROFESSIONAL CONDUCT: THE USE OF STATUTORY BOARDS

The way that accountability procedures build on principles of autonomy can be
identified in the way that different professions respond to matters of professional
misconduct. The social contract nature of professional registration, accreditation and
licensing in nursing, medicine, dentistry, accounting and law has resulted in recent times
in the establishment of structured procedures for responding to issues of unsatisfactory
professional conduct. These structured procedures in all these professions now include:

- Mechanisms through which complaints can be made by the general public
- Commissions set up by legislation to investigate cases of
  unprofessional conduct
• Tribunals called into operation by regulatory bodies to provide legal procedures for the investigation of complaints

• Peer review of the performance of professionals under question

• Imposition of penalties in cases where professional conduct has been proved.

In nursing, the Nurses Registration Board of New South Wales, as the statutory authority and the Health Care Complaints Commission (HCCC) as the independent complaints-handling body, deal with disciplinary matters relating to nursing. This involves:

• accepting complaints lodged by the public;

• consulting on the pathway for all complaints;

• providing written notification to the nurse concerned;

• coordinating mediation or conciliation where warranted;

• undertaking investigation if necessary,

• referring investigated complaints to Professional Standards Committees established by the Nurses Registration Board of New South Wales;

• determining penalties if complaints are sustained.

The NSW Nurses Act of 1991, Section 44 and Section 4, makes a distinction between “unsatisfactory professional conduct” which covers less serious issues or error or negligence, and “professional misconduct” applied to complaints serious enough to be brought before the Nursing Tribunal. This allows the application of the principle that “the punishment should fit the crime”. Their ability to impose lesser sanctions makes it easier for disciplinary bodies to take action which they might be reluctant to do when they only have “extreme penalties” at their disposal.

In law, a Legal Services Commissioner is empowered by the Legal Profession Act, 1987 to investigate unprofessional conduct. The Act provides the machinery and procedure for the making and determination of complaints about legal practitioners. Currently law also features a significant measure of self-regulation. In New South Wales, the Law Society establishes peer review procedures to investigate, adjudicate, judge and pronounce on “unprofessional behaviour” after complaints have been received from the public. In recent years, governments have also established Legal Ombudsmen and Legal Commissioners to provide additional complaints avenues for the public.

In medicine, the New South Wales Medical Board is able to receive complaints about doctors from the general public. The Board reviews each complaint and assesses the best means of addressing the issues raised in it. This assessment is undertaken by the Medical Board’s Conduct Committee, in conjunction with the Health Care Complaints Commission (HCCC).
The Medical Board and the HCCC have a range of avenues available to them to deal with a complaint. These include:

- referring a complaint for further investigation;
- urgent action, including suspension, if the doctor poses a serious threat to the public;
- referring a complaint to another person or body;
- referring a practitioner to undergo a medical assessment;
- determining that no further action be taken on the complaint.

Once an investigation has been completed by the HCCC and the Board together, a recommendation may be referred for disciplinary hearing to the Medical Tribunal, Professional Standards Committees or involve counselling and re-training of the erring practitioner.

In dentistry, matters of conduct are managed by the NSW Dental Board and covered by the Dentists Act 1989. The Ethics Committee, which is a sub-committee of the Board, addresses complaints regarding the professional conduct of individual members of the profession. The Australian Dental Association (ADA), the professional organisation for dentists, has also established procedures to deal with complaints made against its members. These are detailed in its Code of Ethics and Conduct Guidelines.

In accountancy, the Institute of Chartered Accountants in Australia (ICAA) and Chartered Practicing Accountants Australia, have a joint code of professional conduct that is mandatory for all members, affiliates and registered graduates. The code recognises that the objectives of the accountancy profession are to work to the highest standards of professionalism, to attain the highest levels of performance and generally to meet public interest requirements. Non-compliance can lead to disciplinary proceedings identified in Article 27 of the Articles of Association for CPA Australia and By-Law 40 for ICAA.

The processes to manage purported breaches of the code are slightly different in both organisations. These processes may include:

- the complaint to be submitted in writing with supporting documentation
- the complaint referred to an investigating committee whose sole purpose is to determine whether the member has a case to answer (CPA Australia only)
- the complaint referred to a disciplinary committee consisting of peers
- an appeal process.

For complaints upheld, penalties are applied in accordance with the articles. These could include forfeiture of membership, fines, censorship, need for additional professional development or a practice review.
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THE ROLE OF PEER REVIEW

What is common across all of these professions is that ultimately misconduct determinations have peer review at their core, which means that the actions, judgements and discretionary behaviours of the professional are still evaluated and assessed by professional peers.

In the misconduct procedures described above assessment processes still feature professional peer review. Nurses, doctors, lawyers and accountants, who are accused by the public of negligent or unprofessional conduct, are judged by their peers, who determine whether their conduct is indeed “unprofessional”. The penalties for professional negligence and misconduct are also determined in this way. The way that autonomy has been strengthened by this system of regulation and accountability also has had significant impacts on the way that licensing and professional development in these professions operates. In the current crisis over indemnity insurance and public concern about the legal aspects of liability, it is interesting to note that one of the NSW government’s proposals for reform of tort liability is the suggestion to have peer review of professional performance as the basis for deciding claims of professional negligence.

Over time in many professions, even this peer review process has come under challenge. Particularly in medicine it has been argued, especially by public advocacy groups, that peer review as operated by medical boards has amounted to more peer protection than would have resulted from other misconduct procedures involving judgement made by lay assessors. However, even the NSW Health Care Complaints Commission while having gone some way to challenging peer review nonetheless still makes extensive use of the services of medical practitioners in its investigative services and procedures. In reality, peer review is at the core of professional accountability procedures across the professions. Peer review also strengthens professional autonomy by affirming that the profession can be trusted to act responsibility in the management of its affairs. In this way these professions argue that they are meeting new social contract standards with their clients, improving their standards of service and constantly updating their accountability procedures. This “reprofessionalisation” is occurring in a new social and political context, of higher community expectations and increasing impact of legal sanctions for professional misdemeanour.

CONCEPTUALISING AUTONOMY IN TEACHING AND EDUCATION

As already noted, in education there is also a world wide movement to improve accountability in teaching. However, autonomy, the issue so central to accountability in other professions, has been neglected to date. Accountability in teaching has come to mean development of standards, licensing systems, increased supervision of teachers’ work and even in some jurisdictions, teacher testing. This process has been described as “deprofessionalisation” – the erosion of the status of teaching, changes in working conditions, increasing regimes of control and surveillance, decline in the trust accorded to teachers. Research in the UK by Mahony and Hextall showed that “only 20% of Local
Education Authorities (LEA's), no Higher Education Institutions (HEI's) and 5% of schools agreed that standards would enhance the commitment and morale of teachers. Conversely, 57% of LEAs, 90% of HEIs and 63% of schools thought that standards represented an attempt to exert political control over the teaching profession” (2000 p58).

Standards, licensing and accreditation also operate in other professions but the core of accountability procedures is still peer review. This is because peer review, assessment by other professionals, is a defining characteristic of professional autonomy. Other professions have developed standards, licensing and accreditation systems (mostly many years ago and focused to structure continuing professional development) as a necessary but not sufficient way of ensuring accountability.

Given the way that peer review operates to maintain autonomy in other professions, the question that needs to be asked is how autonomy can be incorporated into accountability and unprofessional conduct procedures in teaching.

In teaching, matters of professional conduct are the concern of employers rather than the profession acting through agreed standards of professionalism. Most employers have developed codes of conduct and practice to provide a framework for professionalism in teaching. However, compared to other professions these are extremely limited accountability procedures. The key factors influencing the development of accountability procedures in teaching are

- the mass nature of education, where teachers work with large groups rather than with a single synchronous client or customer;
- the highly unionised nature of education industrial relations;
- the scale of the education industry.
- the hierarchical nature of school organisation and management.

The influence of these factors can be seen in the operation of new accountability procedures such as professional development review systems TARS (Teacher Assessment Review System), and STARS (Secondary Teachers’ Assessment Review System) recently adopted in the New South Wales Department of Education and Training. In these systems principals and head teachers usually determine if teachers are performing their professional duties at a substandard level, assist them to undergo professional development improvement and assess them at regular intervals to monitor improvements in their performance. The elements of accountability systems like this, such as the duration of the review process and the supervision involved, are usually subject to regular industrial negotiation between union and employers.

Employers have developed codes of conduct and practice to provide a framework for professionalism in teaching. The recent Wood Commission into police corruption in New South Wales and the revelations of unethical behaviour by teachers, have led to the strengthening of these codes, the introduction of new legislation and the development of specialised units to monitor and assess teachers for certain professional behaviours.
Sociologically speaking, teaching does not meet the criteria usually used to delineate professions. Teaching lacks regulatory bodies such as the Medical Board, the Health Complaints Bodies and Nurses Registration Boards. Some states have established Teacher Registration Boards (such as the Queensland Teacher Registration Board). However, these teacher Registration Boards typically do not incorporate procedures for dealing with professional misconduct as part of their operation. Their emphasis is on the setting of standards, the strengthening of curriculum for training, and the development of benchmarks for professional development and professional experience.

THE LITERATURE ON AUTONOMY IN TEACHING

The literature on bureaucracy and autonomy in educational sociology, school organisation and educational administration is significant in any discussion of professional autonomy in teaching. Handy and Aitkin (1986) in a seminal discussion of school culture argued that teachers had little autonomy in the role culture of the school and its organisation but significant autonomy in their own classes, where their work with their class was largely autonomous, in the sense that it was unsupervised. In practice, the practitioner autonomy central to professionalism has traditionally been a feature of teaching. Although limited, constrained, variable and contextual, this autonomy has always been recognised and valued in teaching. Its loss would be seen by teachers to constitute “deprofessionalisation”.

The literature on teacher autonomy reveals a diversity of theoretical and methodological approaches. Chubb and Moe (1990) even argued that a “sense of autonomy and freedom from bureaucratic pressure are the most powerful determinants of a school's success in advancing academic learning.” They asserted that professional autonomy is more prevalent in private schools because of the role played by market forces. In contrast, Chubb and Moe argued that public schools were more subject to bureaucracies that stifled teacher professional autonomy. In the debate generated by these ideas no measures, or benchmarks or conceptualisations of autonomy in other in other professions were referred to.

In discussions about teacher ‘autonomy’ one of the leading theorists (Ball 1987) has suggested that teaching features the notion of relative autonomy similar to the approach of Handy and Aitkin

\[\ldots\ \text{organizations are not independent or self-sufficient phenomena}\] (p. 247), both public and private schools are subject to organizational constraints that stem from “external structures (subjects, periods of time) occupational norms (order in the classroom, class rules and so on) \ldots \ [\text{that ensure}] \ some minimal level of uniformity” (Elmore, 1987, p. 64).

Ball (1987) went further and suggested that educators ask, “How autonomous is the organization and its actors from its clients, publics, superiors and audiences or the basic social and economic structures of the society?”
Powell has argued that the “role played by administrators is seen as a key element in teacher autonomy or the reform initiative of “empowering” teachers. He also pointed out that it is not clear how empowered teachers can coexist with strong site-based managers, a primary requirement of a strong leadership that is necessary for reform. Also following Handy and Aitkin, Apple and Teitelbaum (1986) found that different types of professionals can retain control and authority without changing or being changed by the decisions of other professionals. Teachers in any school organization are free to conduct their individual classrooms as they see fit without reducing the autonomy of the principal.

This literature shows that teachers may find themselves “caught between incompatible interpretations of their own self-interest” (Ball, 1987, p. 269). Rubin (1986) argues that

It may not be possible to understand teacher autonomy merely from examining the obvious governmental or organizational forms that are set up to direct their actions. But how teachers manage those constraints is crucial in defining their work life. Sedlak and others (1986) pointed out that, historically, teachers acquiesce to centralized authority yet, once they close their classroom door, most teachers are able to exercise enormous discretion.

As a result, many current researchers follow confirm the ideas of Elmore (1987), who argues treating teachers as passive receivers of external advice undermines their professional authority. Rubin recounts that

Faced with challenges to their autonomy, some imaginative teachers “have used their ingenuity and skill in order to arrive at a way out” (Kozol, 1981, p. 51) or participated in the “strategy of ‘omissive action’ (like non-cooperation . . .)” (Ball, 1987, p. 268). Indeed, Feiman-Nemser and Floden asserted that, based on their review of several studies of teacher culture, current research replaces the image of “a passive teacher molded by bureaucracy and buffeted by external forces” with the image of “an active agent, constructing perspectives and choosing actions,” (1986, p. 523).

What characterizes this literature is its “tenuous connection to empirical research, and its absence of measures of professional autonomy”. The literature has been unable to establish any measure of autonomy or how it is constructed and conceptualized in teaching or in any other professions. The idea of an active and proactive teacher professional is popular in the literature, and educational reforms which construct teachers as passive agents and implementers are condemned as naïve and self-defeating (Sachs, 2000). Hoyle and John (1995) have discussed autonomy through the prism of professional culture and collaboration, arguing that the most effective professional collaboration occurs when the culture of the school supports it. In this sense, autonomy refers to the ability to share collegially, plan cooperatively but still retain the identity that comes from being able to control one’s classroom destiny.
CONCLUSIONS

The paper, through its analysis of professional regulation and unprofessional behaviour regulation, has shown that professional autonomy, at least in other professions has been defined, constructed and strengthened by peer review. The “reprofessionalisation” that has been occurring in these professions has required modification and improvements to a range of procedures that have strengthened practitioner autonomy and the strengthening of peer review has re-identified practitioner autonomy as central to the idea of profession. The development of accountability systems that require professionals to assess their own professional standards and those of their colleagues is seen at the core of professional autonomy.

This is the message also communicated by the professionals who assisted the Teacher Education Review with their professional case studies. In discussions of who should apply professional discipline all participant professionals identified peer review as the best way to investigate and judge allegations of unprofessional behaviour and conduct. Professionals accept that peer review remains the core of professional discipline, and the basis of professional autonomy. Despite trends to question peer review, to widen the role of State regulatory agencies, and to support peer review with consumer and lay agencies as aspects of reprofessionalisation, all professions except teaching have developed misconduct procedures with judgement by professional colleagues at the core of assessment and processes.

It is our contention that peer review has much to offer in the development of accountability procedures in education and teaching. Current trends in teacher accountability developments are clearly seen by the teaching profession as deprofessionalising because they conflict with the autonomy that is a necessary component of professional identity. Given the strong link between autonomy and professionalism and the limited relative autonomy apparent in most teacher-standards developments, peer review processes may offer a way forward in developing accountability processes which strengthen the autonomy and professionalism of teachers. This approach will be in stark contrast to the current standards approach.

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CHANGE: TRANSFORMATIONS IN EDUCATION

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CHAPTER 5

Academic Salary Relativity Research

5.1 The Publications


These publications comprise the research components of two Department of Education, Science and Training (DEST) commissioned research reports. The first research report is the major study of academic salary relativities referred to in the overarching statement. From this major research report three chapters have been selected; chapter 4 on interviews with university senior management on industrial relations trends; chapter 6 on academic salary benchmarking and Chapter 5 on international comparisons of academic salaries. These chapters include the major research methodologies employed in the research study. They were selected as they were conceptualised and written by Horsley, who was lead author of the research study.

The second research report consists of econometric and time series analysis conducted to analyse movements in academic salaries compared to Consumer Price Index (CPI) and Average Weekly Earnings (AWE) for the period 1977-2002. This study was designed, undertaken and completed after the initial report of Salary Relativities and the Australian Academic Labour Market, to further triangulate data published in the original report of academic salary relativities.
5.2 Research Purpose

The purpose of the research presented, was to investigate academic salary relativities with salaries in the private and public sectors and with international academic salaries. During the conceptualisation phase of the study the primary goal was the development of valid data comparators to the comparative wage justice question that is an important part of the Australian industrial relations scene; ‘how much is my salary in relation to that paid to others who do similar work?’

5.3 Research Methodology

Although it may seem that econometric and industrial relations methodologies have developed research techniques to provide evidence on this topic, this was found not to be the case. Interrogation of the existing Australian Bureau of Statistics (ABS) data failed to generate the necessary data to answer the research question. As a result, a new benchmarking methodology was created to generate the necessary data. This benchmarking required the development of a new way to collate and report private sector salaries. The use of private sector human resource data for this functional benchmarking research is a unique response to the demand for new ways to conceptualise and design academic salary relativity data.

5.4 Co-authorship

The chapters in the research reports conceptualised and written by Horsley have been included in this section of the portfolio. Horsley is the first author of both reports as well as the designer of the research methodologies, data collection protocols and analyses of the data.
5.5 Recognition of the Research

The use of this research by the Department of Education, Science and Training (DEST) in developing Higher Education and funding policies is yet to be seen. DEST has not released the research publicly during the period of the fourth round of enterprise bargaining in the Australian Higher Education Sector. It could be supposed that this is due to reasons of industrial relations sensitivity, as the research contains interviews with Vice-Chancellors prior to the current enterprise bargaining round. The data in the research has the potential to cause major political and industrial relations problems for both the government and the higher education sector. In many ways the data is contentious as it reveals a relative decline in academic salaries.

What is clear is that DEST sees the research as a major scoping study on the current operation of industrial relations and human resource management in the higher education sector. In particular, the problems identified in levels E and A academic employment, the changes in the nature of academic work and the low staff turnover in the academic labour market have created a new research agenda for DEST to investigate. Dissemination of this research has been limited. It has been presented at one seminar on comparing salaries across professions at one Australian university, but use of some of the data has been embargoed by DEST. Aspects of the research were the subject of an invited keynote address to the School of Economic and Social Development (SSED) at the University of the South Pacific in August 2003.
SALARY RELATIVITIES

and the

ACADEMIC LABOUR MARKET

August 2003

Mike Horsley
Gayle Martin
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UNIVERSITY OF TECHNOLOGY SYDNEY
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INTERVIEWS: SALARIES, RECRUITMENT AND RELATIVITIES

The project team conducted five research projects to develop the data to analyse national and international employment trends in salary relativities. This chapter discusses the responses given in interviews where the universities responded to a series of structured questions about the employment of staff relating to salaries, recruitment and salary relativities.

Development of Questions

The questions for the interviews were developed as a result of the literature review and its evaluation. The questions were designed to elicit a wide range of human resource, staffing and salary information pertinent to the context of the academic human resource situation facing universities, as well as more narrow salary relativity data. National and international salary relativity information could only be understood in this wider human resource context.

The questions were endorsed by the project steering committee, which included a vice-chancellor. A pilot interview was conducted (with the vice-chancellor of a non-sample university) to evaluate and refine the questions. The pilot interview also allowed the project team to evaluate and plan the interview process. Approximately one month prior to the first interview the questions were sent to the vice-chancellors of the twelve universities selected for the interview sample.

Although it was expected that the questions would be used as the basis of a wide-ranging discussion about human resources, staffing and salary issues three universities prepared written responses to the original questions. In each interview the questions served as triggers for discussion about the staffing and salary situations within the universities. As a result, this research also reports on a range of staffing matters not included in the specific questions originally suggested to the universities.

The questions are set out in the following panel:

### RESEARCH: SALARIES RECRUITMENT AND RELATIVITIES

#### QUESTIONS FOR VICE-CHANCELLORS

1. What proportion of academic staff at your university is being paid the standard rates from the EBA? Is this proportion increasing or decreasing?

2. How difficult is it for the university to fill its academic vacancies? Are these difficulties increasing? Which fields are the most difficult?

3. What have been the main strategies put in place to overcome these problems?

4. To what extent do you think you are competing in the professional field itself? What impact do salary levels in compatible professional fields have on your recruitment, retention and maintenance strategies?

5. How do you determine when the levels of salary or the conditions of service in the EBA should be varied or exceeded?

6. To what extent do you offer competitive remuneration packages to attract academic staff? In your university, what are the most common kinds of incentives being paid/given to academic staff above standard rates?

7. What proportion of academic staff at your university is being paid a loading? Are the loadings concentrated in particular faculties? Are the loadings based on market value or merit?

8. To what extent if any has the university lost staff to overseas or other Australian universities because it could not match the salaries/packages offered?

9. What information do you have on the kinds and levels of “incentives” being paid to special groups or individuals by the other Australian universities?

10. To what extent do the employers of professionals in enterprises outside the university attract university staff from the various teaching and research fields?
CHAPTER 5 Academic Salary Relativity Research

The Interview Process

Interviews were typically of two hours duration. In two instances interviews were only of one hour duration and in one instance the interview lasted three hours. Interviews typically included two members of the project team. In three instances, three members of the project team were present at the interview and in one instance only one member of the project team was present. In the other nine instances two members of the project team were present.

A range of university staff attended the interviews. All interviews were attended by the vice-chancellor (5) or deputy vice-chancellor (6) or the senior human resource management staff member (9) and or senior staff responsible for staffing, human resources or staffing negotiations. In most cases the senior staff present at the interview also were responsible for the university’s Enterprise Bargaining (EBA) negotiations. In one instance the vice-chancellor was interviewed alone.

During each interview, notes were made by one of the project team of the discussions and conversations. These notes later formed the basis of the report. As well, all interviews (except one) were taped and used for later analysis and to confirm details contained in the notes made during the interview. After each interview the project team discussed the content of the notes to confirm the accuracy and reliability of the notes made. This chapter on university responses to the questions includes direct quotes and comments made by the interviewees – these are indicated in indented italics.

The University Response Sample

A sample of twelve universities was selected for analysis after consultation with the Steering Committee. The selection criteria for this sample were designed to capture the variation and characteristics of institutions in the entire public university sector. These criteria for inclusion in the sample are set out in Table 4.1

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<thead>
<tr>
<th>Criteria Representation of Universities in Sample</th>
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<tr>
<td>Go8</td>
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<td>Regional</td>
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The sample size represents one third of the total number of Australian universities. No private universities were included. Most universities are now multi-campus. Prior to the interviews, one university withdrew from the sample.

Findings

Question 1 Payment of EBA rates

Overall, most university academic staff within institutions are covered by the university’s EBA with its staff association. Senior management staff, such as vice-chancellor, deputy and pro vice-chancellors are not covered by the EBA. In some institutions, other senior staff such as executive deans, who have line, staff and financial responsibilities and accountability are also not covered by EBA but have their employment terms and conditions registered in common law contracts.

Most universities report that these senior positions are not covered by Australian Workplace Agreements (AWAs) but by common law contracts. The reason given for this development is the legal complexity of Australian Workplace Agreements. One university used AWAs in structuring its remuneration package for senior academic positions.

AWAs offer us more flexibility above professorial level. We use AWAs to construct salary packages to retain key staff.

Almost all salaries at the bottom of the academic position scale are covered by the existing EBA. This falls to 80 per cent at the top of the academic scale.

It appears that the very bottom salary steps in the Assistant Lecturer scale are being infrequently used by the majority of universities.

we’re employing fewer people at Level A and we’ve got a lot more at Level B than the university sector... generally ....we are having trouble attracting people at Level A, because of the lowness of the salary ....so we tend to advertise lower positions A/B ....we’re actually appointing a lot more at B than we used to....and that’s the way that we’re getting around it.... you don’t appoint at Level A with the market loading, we’re tending to appoint at B..... I suspect that’s happening at other universities

Universities reported that they were increasingly unlikely to make employment offers at level A, preferring to opt for the employment of casuals on fixed contract.

we hardly ever use level A. Most people come in at B and C...we were never convinced that the introduction of level A was a good move... we are using level A more and more for things like post-docs
These responses indicate a relative decline in the proportion of A level employment. The implication of this trend is that there is even less flexibility in the employment profiles of universities than would be assumed from the five level scales for academic positions. A number of universities reported that flexibility in this situation was related to the development of new types of employment.

I’d like to think that we’d move back a bit more toward the old teaching fellow concept, of people coming in on a part-time basis while they pursue their PhD.... I know XX University has done that through their enterprise agreement, they’ve reinstated the concept of the teaching fellow to assist their research development...

Responses to this question raised two issues: the role of casual employment in academic employment and the way that academic employment seemed to be bunching in the middle of the salary scale. Casual employment is increasing in universities, for a range of reasons, and the management of casual staff is a increasing feature of university administration.

...across the university system at the moment the way in which universities are both managing the workloads of their permanent staff, and in fact generating some of the money that’s needed to pay those staff reasonable salaries, is through casualising a significant part of their teaching load....at almost any university you go to now there’s a lot of teaching and marking at a casual level, or the tutoring level.....done by casual staff, and that’s what protects the ability of the university to pay full time staff and also to manage their workloads...

...think we’re probably approaching the point at which we have to think of universities as having...a core of permanent staff, and around that core, a shifting mass of casual staff.... increasingly I think both from a quality assurance perspective and also from a HRIR kind of perspective, the way in which we treat that group of casual staff who have become not just an add-on extra to the operation of the university but really essential to the operation of universities, will be something we will have to look at.

Question 2/3 Filling Academic Vacancies

Clark Kerr, the former President of the University of California proposed the idea that the modern university was a multi-iversity. The multi-iversity, according to Kerr (1963) was a ‘whole series of communities and activities held together by a common name, a common governing body, and related purposes’.

Many historians of universities have pointed out the tensions created in universities by the joint operations of vocational and professional faculties focused on preparing professionals (medicine, engineering, law, finance, information and computing sciences) and the liberal arts faculties (arts, science, psychology) focused on preparing highly educated persons who positively influence the future direction of society.

Accordingly, within a university there are both shared and differential modes of operation, structures and organization by the different faculties. Thus, in interpreting the results of the interviews on the difficulty of recruiting staff it is important to note that there are considerable differences not only between universities but between the faculties and disciplines within them.

All universities reported total academic staff turnover of less than 10 per cent with most reporting a low turnover of less than 5 per cent. These figures reflect a stable staffing profile and stable staffing situation.

1992 the turnover rate for tenured academic staff was 6.8 per cent. Well today in 2002 it’s 8.2 per cent......to my mind anything under 10 per cent is relatively stable and low, I mean our general staff is up around 16-18 per cent.

...our turnover is very small...... the majority by far of the staff would have been here since day one... turnover is mainly through retirement

Mostly universities report overall that they have had no major current difficulties in recruiting staff; however, they report significant salary pressures, now being experienced in the recruitment of new staff. Although overall, universities were able to recruit appropriate staff it was evident that there were problems at both the lowest level (level A - Associate Lecturer) in the salary and academic scale and at the higher levels (level E - Professor) in the salary and academic scales. No major problems in recruitment for levels B, C and D were reported.

Universities report both marked differences and similarities in recruiting staff. All reported that they have experienced difficulties competing for some staff in academic and professional markets such as information technology (IT) and/or some of the business disciplines such as finance and accounting. They have responded to this pressure by way of loadings, remuneration packages and special incentives.

For Sydney universities the cost of living is a significant factor in recruitment and staffing and for others the quality of regional life style and low cost of regional housing is also a significant factor in recruitment and
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staffing. Sydney's housing costs are leading to the need for a London style loading to attract senior or high demand research staff. For other universities, the quality of regional life and low costs may lead to the development of greater salary differentials in future EBAs as these lower costs are taken into account in regional universities.

All universities report major difficulties in attracting high quality overseas applicants because of the uncompetitive salary relativities – overseas salaries in key countries being seen as higher than those of Australian academic salaries. This perception also relates to the types of academic being sought by international recruitment, highly qualified leading researchers or administrators ("we rarely get overseas appointments").

While Australia might be seen as having both lifestyle and professional attractions, salaries, benefits, working conditions and professional opportunities are perceived as not being up to the level available in North America or the United Kingdom. In these cases the university has to create both professional and remunerative packages tailored to suit the desired candidate. Often the cost of the professional incentives, such as research support, can be greater than the individual's remuneration.

research facilities and research teams are additional costs,...

we lost a key person to the USA... we not only lost them but then a number of staff in the same research team....as soon as the team are recognized then the Americans are very quick to make offers to a team.. not only salary but also funding for research infrastructure... how can we compete......its not just salaries that are uncompetitive....

Universities also report some difficulty in recruiting within a salary scale in disciplines where the university is trying to attract applicants from the Australian private or public sectors. In these situations it is typical to offer higher increment steps in the scale (than the universities would have hoped), or use a higher level appointment salary.

These appointments may cause problems with existing staff at lower levels, who see their opportunities for promotion blocked or feel that they are being asked to meet more onerous standards than some of those who have been recruited from industry. Several of the case studies in this report discuss this problem

More difficult issues arise with the recruitment of professorial staff where the Australian university finds itself in competition with overseas institutions.

Let me give you an example, when we were recently recruiting for a ..... we had a person from the UK who was a serious contender (and this comes back to the point about UK and US salaries) and when his salary was converted to $A it was $400,000. There was no way we could compete....

Interviews revealed a trend to research specialisation as universities seek to plan strategically by concentrating their research efforts in their areas of natural advantage, causing them to increase their remuneration offers. Some universities claim that this pressure to specialize is leading to a position where they have to attract leading academics on these areas.

Interviewees expressed concern about the age profile of the current university academic staff. For many universities there is a large concentration of older staff at levels C and at the higher salary scales of Level B. Even though the current staffing profile is relatively stable it is evident that in a short period of time Australia will have to some extent reproduce its academic labour force.

we've still got sort of a bulge at senior lecturer, we're light on associate lecturers, and professors have increased a bit, but what we would be seeing now is the cohort pushing us here .... our senior lecturers who are putting that pressure on are mature, and they are the same cohort that within the next five years will reach retirement age....so that will be interesting ....where is the planning for this....

Questions 4/8 Academic Competition

The questions under this heading were designed to reveal aspects of the operation of the Australian academic labour market. These questions were extended and modified during the interview round so that a number of universities, towards the end of the round, were asked to comment on whether knowledge of overseas salaries play a part in recruitment, retention, and maintenance strategies.

It is at the highest levels where there is significant salary competition from both the university sector and private and public sectors. It is at this level also where the higher salaries available in Canada, the US and UK present a range of problems and come to influence academic staff recruitment, retention and maintenance. It is also at this level that universities must develop specific remuneration strategies needed to attract staff of international research standing.

Some non-research-intensive universities have even argued that the push for research specialisation within the university sector has made it even more pressing for Australian universities to be able to attract staff with international standing. Achieving this has increased the strain on their budgets.

Most research-intensive universities reported that they had lost some staff to overseas universities as a result...
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of salary differentials. There is a significant concern about the situation, that whereas previously Australian universities would attract overseas academics of international reputation as part of the normal academic recruitment process, this was no longer possible due to uncompetitive salaries. The following two comments reflect this:

In our university six faculties have lost senior staff to overseas universities…two faculties have lost staff to other Australian universities due to higher salaries … but other faculties report no loss…

We seek senior research staff overseas due to our research profile. We have difficulty matching salaries from overseas from the USA and the UK in particular. At the dean or director level we are able to pay $150-200k maximum. Often a candidate will currently be on $300k plus or $200k US- so we will have to beef our package up with intangibles such as research infrastructure and other support. We can't push the salary up to those high levels so we try to provide other things… Even at the lower level when competing with the overseas market we find that the best and brightest that we want to keep tend to be snaffled by overseas universities with bigger grants...

As emphasised previously, universities consist of a range of faculties, reflecting varied disciplines. Universities typically report that there are disciplinary features to the international uncompetitiveness of Australian academic salaries. Apart from high profile and high demand disciplines such as information technology, finance and business; foundational disciplines such as nanotechnology, particle physics and genetic engineering also have niche and specific labour markets. In these newly developing areas there is the closest relationship between research and development in the area and the teaching and research of them in a university.

The level of salary uncompetitiveness is accentuated in such areas of high demand academic recruitment. Any university, for whatever reason competing in such fields, must develop specific recruitment and remuneration strategies.

As a result, universities reported that their international recruitment had become much more targeted as they find it harder to compete. A number of universities admitted that they no longer rely on advertising internationally, but used existing staff to approach targeted individuals

Australia isn’t on the radar screen of people overseas, and unless there are individuals who are particularly approached, then it’s not something that people generally think about …Australia’s seen as a great place to live and reccreat, but no one over there says ‘I’m going to go to Australia to do leading edge work… Federation fellowships are trying to deal with that, to bring it back, so yes, you have to go in and tap them on the shoulder, and that requires a lot of intelligence about who you might, then you have them tapped on the shoulder…. We do not advertise internationally any more

Academic labour markets are not static. New requirements and skills are necessary as the nature of university work develops and changes. The development of new academic institutions such as cooperative research centres for example, creates new positions in the development and management and commercialization of research.

At the same time that Australian salaries have become less competitive the nature of academic leadership has extended and broadened; leading international academics have greater diversity of skills and experiences and play greater roles in shaping the culture of academic groupings and strategic planning and development. It is in this newer, to some extent targeted, market that academic institutions must compete for the leading practitioners

One of the things that has changed in the last few years is the nature of the people we are trying to employ. We now want entrepreneurship and commercial experience…. It is even more difficult to attract these...

Question 5 Applying conditions and loadings outside the EBA

Universities exhibit a wide variation in their management structures and governing systems. Some universities group faculties into larger organizational units (colleges) and college deans report to pro or deputy vice-chancellors responsible for these aggregated units. Other universities are characterized by executive deans who report directly to the vice-chancellor.

In some universities senior management exhibited shared decision making procedures with a group of senior pro or vice-chancellors exercising more collegial decision making processes, in consultation with the university’s human resource specialists. Some of the salary and remuneration implications of varied governing and organizational structures have been highlighted by recent high profile management controversies.

At the highest level of appointment to senior management, deans and executive deans, vice chancellors exercised considerable decision-making responsibility. Vice-chancellors and senior management are also involved in professorial and other appointments related to the strategic planning and
positioning of the institution. Faculty and college leadership had more delegated responsibility for positions at academic levels, D, C, B and A in the institution. The following comments reflect the process discussed in the interviews:

We don’t regulate that process. Our EBA covers minimum rates only so we are able to be flexible about how we manage above award rates. At higher level either the vice-chancellor or the DVC will negotiate directly.

By reference to the vice-chancellor in situations where it is deemed critical to recruit and retain staff.

When we review senior executive remuneration at the end of each year we get market data from Human Resource Consultants ....the VC then makes a decision based on a range ....

As more senior staff enter into salary negotiations at the highest levels, as remuneration becomes more complex, and as EBA negotiations involve increased senior management effort, universities are increasingly seeking the assistance of human resource specialists and consultants. A number of universities indicated that they engaged human resource consulting firms to undertake consultancies and management reviews, as the following comments show:

We’ve just engaged Human Resource firm X to do a proper job evaluation..... Prior to that we used to do it a bit on an ad hoc basis. We used to do it fairly regularly for the vice-chancellor, and maybe the deputy vice-chancellor, but doing a formal review of the top positions, we’ve done it twice it 10 years.

Recent reflections on the University’s strategic positioning would encompass those types of considerations...and recommendations from Human Resource firm Y strategic positioning project... talked about matching areas of discipline, trying to build them up as specialisations, talked specifically about attracting professorial staff....

When we review deans’ packages ... there is a performance component.......when we review senior executive remuneration at the end of each year we get market data from human resource firm Z....the VC then makes a decision based on a range ....

These developments were described as a new feature of the industrial relations and human resource environment, and reflected the growing centrality and core business nature of staffing, salary, industrial relations in the management of a university in the new millennium.

Question 6 Offering competitive remuneration packages

Universities reported that they used incentives in addition to the use of loadings to overcome problems in filling positions and attracting and recruiting appropriate staff. These consisted of housing subsidies, research support (staff, travel, facilities, funds) flexible work programs, parental leave, outside earnings, superannuation (university super with a compulsory 18 per cent employer contribution on the salary component of the package is regarded as being generous), housing loans, reduced interest, staff development and training opportunities, reduced or no teaching, packaging of benefits.

Institutions vary considerably in the way they structure these incentives into their remuneration packages. These variations reflect both the location of the institution, the academic position under consideration and the type of institution.

Universities in Sydney increasingly use housing subsidies, whereas in other parts of Australia other incentives may be more appropriate such as generous relocation allowances to regional universities.

Increasingly, universities report that non remuneration components can be extremely important in recruiting new senior (research) staff - often leading researchers require special research facilities and to employment and transport of their current research staff as well.

As one university expressed:

When the IT faculty recruited high flying researchers from overseas, they set up laboratories, new computer equipment, if they had research teams they offered to bring them too, they’ve also set up scholarship schemes for PhD students here so they have that base.....

Working up research, giving them the time to do it.....ground research support is one the major things that we can offer (technology university)

It is at level E at the top academic position, where most of the creativity in packaging occurs. As an example, in one university, senior professorial staff:

....received $50 000 per year for each of five years for research on appointments - not their own personal benefits but for their research....as well ....very often they’ll negotiate a couple of post-docs and researchers to work with them

In another university another mechanism used is sign on payments and actively trying to secure employment for the spouses of highflying academics.

There is constant talk by the universities about the need for flexibility in staffing decisions. This appears
to cover a variety of issues including accelerated progression, performance pay, terms of employment. It seems clear, however, that when it comes to packaging offers, the key inhibitor is the money available.

**Question 7 The payment of loadings**

For the university sector as a whole, the use of salary loadings is increasing.

From the research sample of universities the highest percentage of staff in a university being paid loadings is about 20 per cent (Go8 and research intensive institutions) and the lowest being less than one per cent (typically regional institutions) – “**We only have two staff in the whole university being paid a loading**”). Typically Australian universities have approximately five per cent of their staff being paid loadings above the standard EBA, concentrated in certain positions and disciplines.

Usually the payment of loadings reflects a number of factors: the type of discipline; the level of the academic position; the way that salary packages are constructed; and the type of labour market the academic position reflects.

Loadings usually occur and are applied in disciplines where:

- there is competition between university and private sectors
- there has been shortages of skilled labour in the private/public sectors in such markets as IT and business fields such as finance.

Loadings can apply to whole faculties, especially in finance, business, economics and information technology and in some cases such loadings are funded from the commercial earnings of the faculty/school/discipline concerned.

Our loading proportions have been relatively stable in that it’s been, confined to two faculties, although the faculties themselves may have grown because of the number of staff ….. its been fairly stable for a number of years…

If a loading depends on income, so if income goes down next year then loading goes down

Faculty X at one stage did have market loading across the whole faculty, though they then went ‘oops’ because they couldn’t afford it and they’re thinking about possibly revisiting that in the near future

Loadings can also derive from certain academic positions, for example, senior appointments within a faculty/discipline (“**Level D is a problem, if we offer loadings it is at this level**”) and/or for promotion positions. Loadings usually reflect pressure from salary relativities in academic labour markets where there is private sector competition or international academic labour market competition. Even at Go8 and high intensity research institutions, many faculties do not pay loadings.

A number of universities reported that staff earn additional income from teaching above their agreed and negotiated teaching load, especially in summer sessions:

*almost 15 per cent of our staff earn additional income through above normal teaching – we pay a little bit extra for more teaching; however, this could not be construed as above award payments, but as a growing feature of academic employment.*

Several universities wishing to develop research specialization in certain fields commented on the cost of the loadings necessary to attract the appropriate staff. Salary loadings are only one component of remuneration designed to attract the appropriate staff and can only be evaluated in the context of an entire package and the human resource practices occurring in the university sector.

There is a distinction, for example, between an incentive loading, that is, a figure being added to a standard salary and the placement at recruitment of staff at a higher increment or even on a higher grade of lecturer. An initial boost of $10,000 more at the beginning of an appointment can add up over time. The latter is more common and is seen as a standard part of recruitment.

As in England, this process can often reflect the uncompetitiveness of university salaries. In the context of discussions about salary loadings there were considerable references to promotion and the levels of academic positions.

**Question 9 The nature of incentives**

In analysing the responses in the interviews it was obvious that staff interviewed were extremely knowledgeable about the salary movements, human resources practices and the problems facing other universities. Each university was aware of the EBA agreements negotiated by other institutions and the nature of any differences in the sector. As well, there was wide knowledge of incentives, special loadings, remuneration packages and specific arrangements for staff across and among the sector.

Although the higher education sector has its own industry/employer association and universities have developed a common voice on salary and funding issues through the AVCC, what was unanticipated prior to the interview process was the extent and depth of cooperation in human resources across the sector. Senior management and human resource leaders from
universities shared information, even for strategic appointments in areas where institutions obviously competed:

among most colleagues I’ve known for many years ....a lot more information is shared than anyone would acknowledge.....particularly amongst the say, those in my state ..... I mean we’ve built up a good rapport over the years, and you can pretty much get anything you want, but it’s on a confidential basis....

there are universities that traditionally do not share anything, though most universities HR networks are fairly open..... some universities are more open with their own staff, for example, there are some universities where some HR people are not necessarily aware of what’s in senior staff packages, we’re not them, and sometimes I think there’s an odd perception of where the competition is or isn’t, so we’ve done some sharing of information around research...

This cooperation was designed to ease the flow of information in the academic labour market and allowed the institutions to tailor and develop remuneration packages efficiently, given their funding constraints and staffing needs. In economic terms this free flow of information assisted the market in the improved allocation of human resources.

Without this flow of information the academic labour market could be deemed to be more inefficient. A feature of the United States academic market is the publication of current salary and other remuneration data by the American Association of Professors. The US market features a range of national benchmarks that act to provide the market with the information necessary for rational decision-making and labour market planning.

In the absence of such publicly available information and given the nature of the divergent human resource practices that is arising from the operation of the Australian EBA process such cooperation provides a vital service to the market.

**Question 10 Attracting staff from outside the university**

There is relatively little staff transfer between academia and professions, though salary movements in the professions (as discussed earlier) have an indirect influence on both academic salary and academic positions through entry-level employment:

...we see an unusually high proportion of people coming in at C, D and E from the professions, without the same credentials or whatever you’d want to call it, that you’d expect in a more traditional university. Now that’s an observation coming directly from other universities....

..I think some of the areas in which we recruit, the professional areas, the bigger problem is the relation between academic salaries and the salaries people are getting in those professions. That tends to inflate a little bit the initial level at which people start, within the usual sort of incremental point or step within the levels at which people start.....

..but you couldn’t say that really we had the mobility between professions and academia

There is some evidence that increasingly universities are integrating with professions, especially in an attempt to pay competitive salaries with partnership arrangements in medicine and graduate schools of management especially.

**Institutional Differences, Variations and Flexibility Arising from the Interviews**

As well as the major findings discussed so far, the interview research established other conclusions about salary flexibility, the differences in human resource practices between institutions and the nature of salary competition between universities.

**Flexibility**

One conclusion from the interview responses is that human resource practices in the higher education sector exhibit far more flexibility than predicted. Crossroads papers include much comments on the increasing necessity of workplace flexibility, the rigidity of current industrial structures and the limited progress being made toward meeting the workplace flexibility challenge. In such discussions the exact meaning of the term ‘flexibility’ is often not clear.

From the perspective of universities, salary and workplace flexibility refer to the new ways they have developed to attract, recruit, maintain and retain the staff they consider vital to meeting their diverse staffing needs. In this context all the institutions interviewed have increased their flexibility in salary and remuneration packaging. As well, most universities have developed plans for increasing flexibility through the current round of enterprise bargaining. We contend that the sector has responded flexibly and innovatively to current staffing issues and structures, as the following comments illustrate:

as a sector we believe we are very flexible and innovative.

we have flexibility within salary bands, EBAs only set minimum salaries
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The flexibility to engage people has dramatically changed since 1998... the issue is how can you work around your salary structure...

The EBA does allow for flexibility... the only situation where this might be a problem is if they do not allow for salary sacrifice.

In addition there is considerable institutional variation in the ways that this developing flexibility is being exercised. From the role of salary loadings to payment of location allowances, universities are responding to their local, national and international academic labour market signals by developing flexible staffing and salary arrangements to meet their particular staffing needs and niches in the academic labour market. Nonetheless, the variation between universities can also be less than the variations between the faculties within a university. The proportion of the university that is comprised of professional faculties, and the closeness of their relationship to private practice have forced many institutions to develop similar but varied flexible salary and staffing arrangements.

It is also noted that other conceptualisations of flexibility prefer the use of Australian Workplace Agreements so that individual employees staffing arrangements can be more closely related to the strategic priorities and productivity needs of the employer.

The flexibility reported in the section above has occurred within the current framework of EBA negotiations between employees, staff associations and the NTEU.

**Faculty Variations**

Part of this emerging institutional flexibility is the development of significant differences in faculty remuneration within the same university.

It is important to note that flexible arrangements that do appear refer to those disciplines more closely related to private sector employment and are more influenced by salaries in those sectors. Although Level A salaries are uncompetitive in all faculties because of higher paid positions in the general private sector labour market, most of the newer flexible arrangements are concentrated in certain faculties.

**Regional Variations**

Another finding for the interviews was the extent of regional variation in salary and staffing practices. Although institutions respond to Australia wide features of the academic labour market, and some sub-markets are cohesive, they also have developed significant regional variations. The varied history, specializations, characteristics and location of universities have provided opportunities for regional universities especially, to develop individual responses to salary and staffing. Some of these can be identified in the following comments:

- We emphasise attraction like..... lifestyle, opportunity for research in our region... as part of our salary negotiations
- We have strong professional partnerships and connections due to our mission and history
- We retain high quality staff due to family, infrastructure and lifestyle ...and the prestige of being a big fish in a small pond....
- We attract newish academics who see this institution as part of their career path
- We are probably the largest employer in our region... this affects the way we recruit and what we offer....
- As a regional university our market is different from metropolitan universities, we tend to draw level A and some of our level B's from the surrounding area, as we move up the scale we broaden our horizons... our staffing profile is different.
- Sydney is a real issue, in terms of attracting interstate and internationally, ... with the capacity for salary
- Our offshore competition is primarily from Singapore and Hong Kong, rather than other Australian Universities

These regional variations have lead to the development of specific institutional recruitment, retention and salary strategies, developments that are likely to increase national differentiation in future EBA round outcomes.

**Competition in the Academic Labour Market**

The Crossroads Overview paper (2002, p.30) suggested that ‘universities need to recognize that they too are businesses’ a view echoed by those who promote the concept of the ‘enterprise university’ (Marginson, 2002). As universities increasingly come to resemble other corporate business entities it is not surprising that they become not only more competitive, but that their competition takes new forms. Although the extent of staffing cooperation and sharing surprised the researchers, competition for staff is vigorous.

Universities compete for staff and sometimes even develop specific packages to lure special staff from other (competitor) universities. Some of the interviewees have suggested that increased competition in high demand, hard to staff areas actually produces a salary spiral that does not
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necessarily reflect either the underlying or private market for the academic areas and the skills in apparent high demand and short supply. The nature of much staffing and salary competition is indicated by the comments below.

we'd estimated we could probably afford about half of what they were offering, I didn't think we could afford it ... ... at the end of the day we had to find a way of coming within a reasonable distance

we are in competition with other universities that are after our best staff

some aspects of salary competition between us means that we jack up salaries for particular areas by competing against each other.... There seems little competition apart from the universities

I think even now we will acknowledge that the main competition is other higher education institutions for that particular faculty, not industry

there's not a significant movement of academics out into the private sector

it's just a fair competition, a mix of private organisations, professionals, other higher education institutions and some research institutions.

to attract the same levels of skill will be very difficult, and it won't just be us, all universities will be facing this problem, we will be the competition and it will really hot up because the profile's very similar at most universities.

One university even suggested that increasing PhD places in a high demand, short supply area of specialist knowledge (IT) to develop staff for the future would be counter productive for the university. The end result of such a policy could result in the situation where the university could train its competitors' future workforce, resources may be more appropriately allocated by selective targeting of key staff from other institutions rather than increasing its own output of research students. These considerations are likely to be more important in future staffing planning.

Local labour markets

Most academic staff are recruited from the local universities either as ex students at the bottom of the academic scale, or from other universities. Most of the promotion positions below Level D and E are filled by internal promotion.

Overseas labour markets

Many of the senior management present at interviews had experience in United States, Canadian and United Kingdom universities. They made reference to the salary and remuneration systems operating in these countries in making comparisons with the current Australian situation.

Although the strongest academic labour markets, both in size and financial rewards are in the US and Canada, but the UK is catching up following a great deal of concern about the brain drain from the UK to North America. There is some concern among some Australian universities that the Asian universities will become even more aggressive in recruiting staff from Australian universities.

Other income for staff

Depending on the expertise of the individual and perhaps the location of the university, staff can earn additional remuneration by acting as private consultants, though most universities have strict rules requiring approval of this work and disclosure of the monies earned. This area needs more research as it is not exactly clear how these procedures vary among different disciplines and different universities.

Staff may earn up to a quarter of their salary through outside earnings but must contribute a proportion of salary to the university if their salary rises above 25 per cent of earnings

Staff may also earn additional university income by engaging in additional teaching in special programs, for example, overseas programs run by the university or in commercial programs or research conducted by a separately constituted research project or by the university's commercial arm.

Federation fellowships

Federation Fellowships attracted a range of responses from universities. Designed to lure back leading researchers who had moved overseas, the scheme provided federal funding to top up professorial salaries (to $225,000) to provide internationally competitive salaries.

Australia's seen as a great place to live and recreate, but no one over there says 'I'm going
to go to Australia to do leading edge work", I mean I've never heard that phrase ever. Federation Fellowships are trying to deal with the situation ...

**Academic work and working conditions - unbundling**

There is a widespread view that the nature of academic work is changing rapidly. Extreme versions of these views, also suggest that the nature and even the character of the university is changing as a result – the 'enterprise' or 'entrepreneurial' university are descriptions of such developments. In one version of this argument, research, teaching, instructional design, course delivery, administration, quality teaching and assessment are increasingly being unbundled and becoming increasingly specialized.

New positions of faculty business manager and financial (cost) controllers, specialized marketing and management staff are seen as examples of this process at work in the academic world – as the following remarks made in the course of our consultations indicate:

> the intrusion of technology particularly is going to change the academic workplace.... those traditions of the teacher who does everything from whoa to go in curriculum design right through to delivery and assessment, who also is a scholar... sooner or later I think we are going to have a difference, which will mean that those traditions of people who you and I would understand of what being an academic is, I think that's going to change, which will perhaps cause impacts on salaries and remuneration differentiation.

... one of the things I was trying to persuade a young colleague, a person who had invested in being an instructional designer and had been sent away to places like the top universities in the US, and I said you're going to have a set of skills that are going to be very viable. Instead he came back, took up a traditional lectureship and said: 'look, I want to do a research career'. I actually said you know, with all due respect, the chances of accelerating through the system, being a traditional mixture of teacher and researcher, is going to be totally difficult. With this particular unique set of skills, about understanding instructional design in academic context, as an academic who really understood the use of technology and all the pedagogic issues, but they just, it was outside their comfort zone, they wanted to go back into being a traditional (biologist?)

I suspect more of that will happen, and that those people will beat a premium. So it won't always be that unbundling roles will lead to salary diminution in the first instance. I think people who spotted that as a market niche will be paid at a premium. Later on, you can see that some of that unbundling might lead to salary reduction, because they can separate out, they've got a marker, you know it's a bit like when you think about how we deal with casuals, someone who's doing marking or just someone who's doing tutorials, someone who's doing that, and that unbundling of skills might have the capacity to actually deflate salary.

We consciously want to take heads of school away from the academic environment and put them on managerial scales, the same as other universities. For heads of schools we'd probably have a revisionary appointment back to whatever they were, and they would maintain tenure, but we would take them off that and we're envisaging putting them on to a managerial packaging arrangement.
CHAPTER 5

TRADITIONAL AND INTERNATIONAL COMPARISONS OF AUSTRALIAN ACADEMIC SALARIES

This chapter will overview briefly recent research on international salary comparisons relevant to Australian academic salary analysis.

The chapter will discuss

- Origins of the need for new international comparisons
- The Commonwealth Higher Education Management Survey of Salaries
- Other international comparisons of salaries
- Australian and United State salary comparisons
- The academic salary benchmarking undertaken in the United States of America
- Data limitations in international comparisons
- Comparisons between academic and private professional salaries in Australia and the United Kingdom

It will also provide a brief commentary on this research as a precursor to the benchmarking data presented in Chapter 6.

The Need for New International Comparisons

Only comparatively recently have international comparisons of academic salaries been attempted by a number of different institutions and organizations. Such new statistical academic salary analysis reflects concerns by governments, unions and professional bodies that the salaries paid to their nation's academics have become uncompetitive in the international global academic labour market.

This anxiety about a nation's academic salaries being uncompetitive springs from the concern that nations are in danger of losing the human resources required for a knowledge based economy as academics respond to international salary differentials and become mobile in pursuit of improved remuneration and conditions. In the United States, high salaries and improved conditions are a magnet to lure the best and brightest overseas academics to the United States, thus improving the position of the United States in the global knowledge marketplace.

International comparisons of academic salaries are difficult because of the variations in the structure of remuneration systems in the academic labour market from country to country. As a result, only recently have significant efforts to develop statistical comparisons of academic salaries in a range of countries been attempted.

The CHEMS survey analysis

The most wide ranging comparisons of academic staff salaries and benefits have been developed by the annual CHEMS (Commonwealth Higher Education Management Service) survey from the United Kingdom. This survey, first conducted in January 2000, compares academic salaries in Hong Kong, Singapore, South Africa, United Kingdom, Australia, Canada and New Zealand. The initial data was collected in 1999 but has been revised and is now available for 2000-2001 and 2001-2002. It was based on a survey of 50 universities from six Commonwealth nations.

The CHEMS survey uses academic salary, pension and medical aid schemes, leave entitlements and other benefits such as car and housing allowances in determining the comparisons of salaries paid to academics across the range of academic positions. The CHEMS survey converts local currencies into US dollars, which are then adjusted to take account of purchasing power parity using World Bank figures.

One of the main problems in salary comparisons is to relate salary for a range of academic titles. The survey developed a way of comparing staff titles by using a

Purchasing power parity

Purchasing power parity values reflect the number of monetary units needed in each country to buy the same representative “basket” of consumer goods and services as could be bought for a set number of US dollars in the USA. Applying PPP conversion factors to local salary figures provides a more accurate comparison of the 'real' value of academic salaries in different countries than can be achieved by conversion to US dollars using the market exchange rate, which can be highly volatile. The World Bank data used here are as at the end of 1996, but given generally low levels of inflation between 1996 and 1999, they are unlikely to have changed much (OECD PPP figures for 1998 for Australian (1.32), Canada (1.17), New Zealand (1.48) and the UK (0.66) are very close to those given here). Source CHEMS, 2000
Analysis of the CHEMS Survey Results

The survey allows some measurement of the competitiveness of Australian academic salary and remuneration. The data shows that Australian academic salaries at all levels for all positions are uncompetitive with those of Singapore and Hong Kong. In comparison to the UK, Canada and South Africa, Australian academic salaries are competitive depending on the level and scale of the position being considered.

| Table 5.1 Average Academic Staff Salaries by Country (US$ per annum (b)) |
|---|---|---|---|---|---|---|
| | Australia | Canada | Hong Kong | New Zealand | Singapore | South Africa | UK |
| ASSISTANT LECTURER | 25,501 | 31,935 | 51,629 | 24,921 | 26,900 | 25,897 |
| Bottom of Scale | 30,431 | 36,946 | 58,864 | 26,364 | 33,001 | 30,513 |
| Middle of Scale | 34,595 | 41,957 | 66,077 | 27,807 | 39,102 | 35,357 |
| Top of Scale | 36,388 | 34,573 | 70,880 | 30,898 | 39,095 | 40,152 | 36,268 |
| LECTURER | 39,796 | 43,057 | 94,711 | 34,349 | 54,831 | 49,658 | 43,482 |
| Bottom of Scale | 43,195 | 50,852 | 118,412 | 37,706 | 70,567 | 59,165 | 50,690 |
| Middle of Scale | 44,575 | 42,874 | 110,125 | 39,659 | 39,095 | 52,602 | 47,686 |
| Top of Scale | 47,986 | 53,896 | 129,100 | 45,125 | 54,831 | 60,837 | 53,128 |
| SENIOR LECTURER | 51,391 | 65,202 | 147,936 | 51,229 | 70,567 | 69,071 | 58,571 |
| ASSOCIATE PROFESSOR | 53,641 | 54,325 | 114,890 | 51,535 | 73,814 | 63,058 | 47,686 |
| Bottom of Scale | 56,579 | 133,811 | 54,647 | 99,399 | 71,129 | 53,128 |
| Middle of Scale | 59,135 | 152,632 | 57,733 | 124,983 | 79,200 | 58,571 |
| Top of Scale | 59,003 | 157,197 | 58,846 | 105,287 | 71,580 | 56,093 |

Notes:

a) These figures include a "flexi-wage component", equivalent in 1998 to 1.75 months' gross annual salary.
b) The salary figures in US dollars given here have been calculated to take account of purchasing power parity using conversion factor figures supplied by the World Bank. These figures are as at the end of 1996, but given generally low levels of inflation between 1996 and 1999, they are unlikely to have changed much (OECD figures for 1998 for Australia (1.32), Canada (1.17), New Zealand (1.48) and the UK (0.66) are very close to those given here). The PPP conversion factor figure for each country is shown in the top left-hand corner of the relevant section.

Academic Staff Titles: Although Australia, New Zealand and South Africa use the academic staff titles listed here, the UK, Hong Kong, Singapore and Canada use different systems. We have equated them as follows for the purpose of comparison:

<table>
<thead>
<tr>
<th>Canada</th>
<th>Hong Kong</th>
<th>Singapore</th>
<th>UK</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assistant Lecturer</td>
<td>Instructor/Lecturer</td>
<td>Lecturer</td>
<td>Lecturer A</td>
</tr>
<tr>
<td>Lecturer</td>
<td>Assistant Professor</td>
<td>Asst. Prof. I/Prof. II</td>
<td>Asst. Prof.</td>
</tr>
<tr>
<td>Senior Lecturer</td>
<td>Associate Professor</td>
<td>Assoc. Prof. I/Prof. II</td>
<td>Asst. Prof.</td>
</tr>
<tr>
<td>Associate Professor</td>
<td>Professor</td>
<td>Professor I</td>
<td>Assoc. Prof.</td>
</tr>
<tr>
<td>Professor</td>
<td>Professor (Professorial scale)</td>
<td>Professor</td>
<td></td>
</tr>
</tbody>
</table>

Source: CHEMS Survey 1998-99
Table 5.2 Average Academic Staff Salaries by Country (US$ per annum (a))

<table>
<thead>
<tr>
<th>Position</th>
<th>Australia</th>
<th>Canada</th>
<th>New Zealand</th>
<th>Singapore</th>
<th>South Africa</th>
<th>UK</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASSISTANT LECTURER</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bottom of Scale</td>
<td>25,874</td>
<td>25,461</td>
<td></td>
<td>30,378</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Middle of Scale</td>
<td>31,645</td>
<td>26,939</td>
<td></td>
<td>37,068</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Top of Scale</td>
<td>36,415</td>
<td>28,418</td>
<td></td>
<td>43,759</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LECTURER</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bottom of Scale</td>
<td>38,326</td>
<td>29,437</td>
<td></td>
<td>40,865</td>
<td></td>
<td>27,732</td>
</tr>
<tr>
<td>Middle of Scale</td>
<td>41,907</td>
<td>36,764</td>
<td></td>
<td>53,137</td>
<td></td>
<td>32,037</td>
</tr>
<tr>
<td>Top of Scale</td>
<td>45,488</td>
<td>44,090</td>
<td></td>
<td>65,409</td>
<td></td>
<td>36,341</td>
</tr>
<tr>
<td>SENIOR LECTURER</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bottom of Scale</td>
<td>46,918</td>
<td>41,707</td>
<td></td>
<td>43,988</td>
<td></td>
<td>37,563</td>
</tr>
<tr>
<td>Middle of Scale</td>
<td>50,493</td>
<td>47,070</td>
<td></td>
<td>62,975</td>
<td></td>
<td>42,276</td>
</tr>
<tr>
<td>Top of Scale</td>
<td>54,067</td>
<td>52,434</td>
<td></td>
<td>81,963</td>
<td></td>
<td>46,990</td>
</tr>
<tr>
<td>ASSOCIATE PROFESSOR</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bottom of Scale</td>
<td>56,450</td>
<td>45,102</td>
<td></td>
<td>67,055</td>
<td></td>
<td>48,711</td>
</tr>
<tr>
<td>Middle of Scale</td>
<td>59,364</td>
<td>52,746</td>
<td></td>
<td>96,810</td>
<td></td>
<td>52,703</td>
</tr>
<tr>
<td>Top of Scale</td>
<td>62,279</td>
<td>58,502</td>
<td></td>
<td>126,564</td>
<td></td>
<td>56,695</td>
</tr>
<tr>
<td>PROFESSOR</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bottom of Scale</td>
<td>72,441</td>
<td>56,179</td>
<td></td>
<td>107,362</td>
<td></td>
<td>57,329</td>
</tr>
</tbody>
</table>

Notes: (a) PPP Conversion Factors used here from the World Bank 1998:
Australia: 1.31; Canada: 1.18; New Zealand: 1.46; South Africa: 1.86; Singapore: 1.63; UK: 0.654.

Compared with Canada, Australian salaries are uncompetitive at all levels except that of professor. Compared with the UK, Australian salaries are similar at position’s starting scales but fall away at the top end of the scale. Australian academic salaries are clearly more competitive than those of New Zealand. Comparisons of other benefits and aspects of remuneration are generally inconclusive as each country provides a range of different benefits for academics.

The original data from the survey has been updated for 2001 - 2002. This updated data is provided in Table 5.2. The update shows international comparisons have changed little, despite relatively large salary increases in Australia as a result of the enterprise wage bargaining round in the late 1990s.

The Productivity Commission also developed internation purchasing parity power using a ppp index in its publication, University Resourcing: Australia in an Internation Context 2002. The Productivity Commission’s conclusions are included below:

According to a survey of academic salaries and benefits by the Association of Commonwealth Universities, Australian academics are reasonably paid in comparison to their counterparts in some other Commonwealth countries, although much lower than in Singapore for the middle level of senior lecturer and above.

A feature of the Australian salary scales is the smaller spread between the lowest and highest paid academics. There is a 60 per cent difference from the bottom scale for lecturer to the top scale for associate professor in Australia, compared with a difference of more than 80 per cent in New Zealand, 100 per cent in the UK and 140 per cent in Canada. There is a 188 per cent difference between the bottom senior lecturer scale and the top associate professor scale in Singapore.

Information on average academic salaries in the United States in 1999 was obtained from a different source. These salaries are larger than all the other countries except Singapore and have presumably been adjusted upwards since 1999. The extent to which the average salary of senior lecturers is greater in the United States than Australia is understated. Furthermore, if current market exchange rates were used to express the US salaries in Australia dollar terms instead of PPP rates, the figure for senior lecturers in the US would be over A$103,000 (compared with A$66,146 for the middle scale of senior lecturer in Australia).

International Comparisons

A number of other international comparisons of academic salary spending power based on purchasing parity have also been attempted. Recently, The British higher education academic staff unions developed an international spending comparison of academic salary for 1998. This is set out in Table 5.3, together with an accompanying explanation of its statistical development.
### Table 5.3 International comparison of academic pay

<table>
<thead>
<tr>
<th>Country</th>
<th>£</th>
</tr>
</thead>
<tbody>
<tr>
<td>Canada</td>
<td>72,700</td>
</tr>
<tr>
<td>Italy (Italy)</td>
<td>72,400</td>
</tr>
<tr>
<td>United States</td>
<td>56,100</td>
</tr>
<tr>
<td>Finland</td>
<td>47,100</td>
</tr>
<tr>
<td>Australia</td>
<td>39,900</td>
</tr>
<tr>
<td>France</td>
<td>34,500</td>
</tr>
<tr>
<td>Norway</td>
<td>31,200</td>
</tr>
<tr>
<td>Spain</td>
<td>24,900</td>
</tr>
<tr>
<td>Germany</td>
<td>24,800</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>21,800</td>
</tr>
<tr>
<td>Greece</td>
<td>20,800</td>
</tr>
<tr>
<td>Mexico</td>
<td>18,400</td>
</tr>
<tr>
<td>Turkey</td>
<td>18,200</td>
</tr>
<tr>
<td>Japan</td>
<td>16,500</td>
</tr>
<tr>
<td>Czech Republic</td>
<td>11,500</td>
</tr>
</tbody>
</table>

Note: All figures for this table have been derived from official OECD statistics, either those published in “Education at a Glance 2001” or in the datasets which underlie the tables and which are available from www.oecd.org OECD data on academic pay is in turn taken from the UNESCO/OECD annual survey of Tertiary pay. Previous comparisons of academic pay have suffered from the fact that tax regimes, exchange rates, social benefits and living costs vary greatly, hence gross pay comparisons are little guide to relative purchasing power. The table corrects for this by using the OECD Purchasing Price Index, which takes benefits, taxes, exchange rates and living costs into account. It covers all teaching and teaching/research staff in tertiary level institutions, including part-time and fixed term staff.

The salary figures in the table show the purchasing power (parity) of average academic pay. Average academic pay has been calculated by deriving a figure to represent an average salary across all levels and positions. This average salary has then been adjusted by purchasing power parity analysis to produce a ranking of the real purchasing power parity of academics internationally. Analysis of this table indicates that Australian academic salaries are generally uncompetitive in the international academic labour market, with Canada, the United States, Italy, and Finland, similar to France, Norway and more competitive than Spain, Germany and the UK.

### Table 5.4 United States Average Academic Salaries AAUP Survey 2001-2

<table>
<thead>
<tr>
<th>Doctoral Institutions</th>
<th>All</th>
<th>Public</th>
<th>Private, independent</th>
<th>Church-related</th>
</tr>
</thead>
<tbody>
<tr>
<td>Salary $</td>
<td>1-year change</td>
<td>Salary $</td>
<td>1-year change</td>
<td>Salary $</td>
</tr>
<tr>
<td>Professor</td>
<td>94,788 (+4.4%)</td>
<td>89,631 (+4.2%)</td>
<td>112,534 (+4.9%)</td>
<td>99,426 (+3.7%)</td>
</tr>
<tr>
<td>Associate Professor</td>
<td>64,953 (+3.8%)</td>
<td>63,049 (+3.5%)</td>
<td>73,470 (+5.1%)</td>
<td>68,045 (+4.5%)</td>
</tr>
<tr>
<td>Assistant Professor</td>
<td>55,404 (+5.3%)</td>
<td>53,392 (+5.1%)</td>
<td>64,149 (+5.2%)</td>
<td>56,863 (+6.9%)</td>
</tr>
<tr>
<td>Instructor</td>
<td>37,959 (+4.3%)</td>
<td>36,832 (+4.7%)</td>
<td>43,372 (+3.1%)</td>
<td>47,205 (+5.3%)</td>
</tr>
<tr>
<td>Lecturer</td>
<td>44,025 --</td>
<td>43,337 --</td>
<td>46,590 --</td>
<td>42,433 --</td>
</tr>
<tr>
<td>No rank</td>
<td>41,160 --</td>
<td>43,962 --</td>
<td>53,009 --</td>
<td>53,073 --</td>
</tr>
<tr>
<td>All</td>
<td>72,183 (+3.8%)</td>
<td>66,717 (+3.7%)</td>
<td>86,004 (+4.0%)</td>
<td>74,959 (+4.5%)</td>
</tr>
</tbody>
</table>

The US academic labour market is the largest, most complex and sophisticated in the world. Developing meaningful average data on United States academic salaries is extraordinarily difficult. As a result making comparisons or averages of US and other overseas academic salaries presents a range of methodological problems that are not easily solved.

There are basically two major sources of data on United States academic salaries. The American Association of College Professors (AAUP) has developed a range of comparative data over a considerable time for use in academic salary comparisons, the American Association of College Professors (AAUP) under the leadership of Daniel Hamermesh from the University of Texas conducts a survey of US higher education institutions (in 2001-02, 1,433 institutions) and incorporates National Center for Education Statistics (NCES) salary data collected by the Federal Government to produce a range of data that shows:

1. annual salary increases for academic positions;
2. trend series in academic salaries, compared to inflation;
3. comparisons of academic salaries between public and private universities;
4. comparisons of academic salaries to salaries of professional groups in the workforce;
5. AAUP data is also available on gender and institutional salary differentials.

Table 5.4 shows the average salary for academic staff at higher education institutions with doctoral programs (similar to Australian HEIs). The institutions are divided into public, private and church related and all universities. The data set incorporates average salary for each academic level and per cent change 2001 to 2002.
CHAPTER 5 Academic Salary Relativity Research

Even a cursory glance at US average academic salary scales, given the current exchange rate (AUD 55.5 per USD 4/12/02) indicates that Australian academic salaries are uncompetitive with those in the US. The 2002 average academic salary in the US is almost double that of Australian academics at all positions and ranks. AAUP data also indicates that:

- US academic salaries and salary increases have exceeded inflation in the last 20 years
- Recent salary increases for academics have been highest for assistant professors “this market is most affected strongly by alternatives outside academia”
- A widening salary differential has developed between academic salaries at public and private universities

AAUP has also developed data on:

- the relativities between academic and professional salaries and
- gender differentials in academic salaries

This data shows that except for the early 1990s, when private sector scientists’ average earnings equaled those of academic faculty, the earnings of all the other groups have consistently exceeded those of faculty. Also noteworthy is the generally rising relative pay in the four other occupations compared with that in academy over the past two or three years. There is little doubt that in the United Stage college and university faculty lost ground to other professionals beginning in the late 1990s.

*Compared with our relative rewards in the mid-1990s and even 1980, we are today less well rewarded than many other comparably educated professionals.*

*Within this relative poverty, academic institutions at least made progress compared with employers of other professionals in how they pay their female members and in the numbers of women they hire.*

AAUP Salary Survey, 2000–2001, p.4

**Benchmarking United States academic salaries**

Most United States universities conduct comparisons of academic salaries between themselves and similar (competitor) universities. This is completed by using AAUP data and other data sets. These include the Association of American Universities Data Exchange (AAAUDE) statistics on academic salaries and other data sets prepared by individual universities.

These benchmarks are widely circulated within the universities and provide a metric to compare salary relativities. They are used in salary negotiation within a university and used to make decision on academic levels and positions. This benchmarking is a key feature of the operation of the U.S. academic labour market.

**Data limitations of International Comparisons**

The international comparisons discussed so far suffer from a range of methodological difficulties. These include the fact that salaries are averaged across disciplines, regions and quality of staff. As well, international comparisons cannot distinguish between award and other award payments that have crept into remuneration systems. As well, averaging across disciplines and institutions may not capture variations that are important to the internal labour market within faculties, disciplines and regions.

**Comparing Academic to Professional Salaries: Australia and International Data**

**Australia**

A range of limited data is available to indicate relativities between academic and other salaries. The National Tertiary Education Union (NTEU) provides data using the comparators of Average Weekly Earning and Senior Lecturer Scale C1. This data is shown in Chart 5.1 comparing Academic Salary Index and Average Weekly Earnings.

The graph indicates that academic salary increases have consistently fallen behind Average Weekly Income increases since 1995. Post 1996, institutional differences in salaries developed as a result of the introduction of enterprise bargaining, as local
productivity trade offs were made for varied salary increases.

The NTEU also has submitted wage lost index data for the Crossroads Review. This is shown in Table 5.6.

According to the NTEU, higher education rates have only just kept pace with the Wage Cost Index (WCI). In the four calendar years December 1997 – December 2001, higher education staff received increases averaging 13.5 per cent compared to 12.9 per cent for all workers. However, as the table demonstrates the rate of increase for higher education employees has been less than the increase for professional workers (14.9 per cent) and for managers (13.9 per cent).

**Relativities**

Relativities have traditionally been a feature of the Australian industrial relations system. During the period covered by centralized bargaining comparators for academic salaries included positions such as; Federal MHR, CSIRO Senior Research, NSW Teachers, Federal Public Service at certain grades.

These traditional comparators are discussed more fully in Chapter 6.

Other professions such as nursing and librarians, who have suffered similar declines in relativities as have academics, recently mounted campaigns aimed at partially restoring historical relativities.

**United Kingdom**

The relative decline in academic salaries identified in Australia is a world wide phenomenon. In the UK the British higher education academic staff unions have produced data that show:

- academic salaries were cut in real terms in nine of the years between 1990-91 and 2000-1;
- while average earnings rose by 44 per cent over inflation from 1981 to 2001, academic salaries rose by only 7 per cent above inflation.

These details are identified by the Chart 5.2.

Following the 1997 report of the Dearing Committee on Higher Education in the United Kingdom, an independent review of pay and employment conditions in higher education under the chairmanship of Sir Michael Bett was established. The Bett Committee handed down its report in June 1999.

While the Report was primarily concerned with establishing effective national arrangements for the determination of salaries and conditions, its recommendations on salary levels reflected the evidence it had gathered on the disparities between salaries in higher education and comparable salaries in the work force at large; in particular, it identified the importance of redressing the relatively poor salaries being paid to beginning and senior academics.

The Bett Report (1999), the CHEMS Survey (2001-2002) and the recent NATFHE (2002) analysis have all confirmed the decline in the relative salaries of academics in the UK. The Bett Report also

**Chart 5.2 Academic and academic-related pay and average earnings* 1981-2001 (real terms)**

*average of all full-time employees (manual and non-manual)
Table 5.5 Comparison of Higher Education Wage Outcomes with Movements in Wage Cost Index (December 1997 - December 2000)

<table>
<thead>
<tr>
<th></th>
<th>DEC 1997</th>
<th>DEC 2001</th>
<th>% INCREASE</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Workers</td>
<td>101.2</td>
<td>114.1</td>
<td>12.9</td>
</tr>
<tr>
<td>Professionals</td>
<td>101.2</td>
<td>116.1</td>
<td>14.9</td>
</tr>
<tr>
<td>Managers</td>
<td>101.6</td>
<td>115.5</td>
<td>13.9</td>
</tr>
<tr>
<td>Academic Staff</td>
<td>100.00</td>
<td>113.5</td>
<td>13.5</td>
</tr>
<tr>
<td>General Staff</td>
<td>100.00</td>
<td>113.4</td>
<td>13.4</td>
</tr>
</tbody>
</table>

Sources: ABS Wage Cost Index, February 2002. NTEU Database. (average outcome for Senior Lecturer and for Level 6 General Staff)
NTEU submission to Crossroads, 2002, p.48

developed some adjustment comparators and made recommendations on the size of academic salary increases needed to restore some of the lost relativities. These adjustments have since been reanalyzed by NATFHE and enhanced to bring them into line with current benchmarks.

The recently released British White Paper *The Future of Higher Education* has acknowledged the continuing uncompetitiveness of academic salaries in Britain and its negative impact on the recruitment and retention of high quality academic staff. It saw therefore one of the challenges for higher education in the UK

*to recruit, retain and reward the calibre of academic staff needed to sustain and improve both teaching and research.*

DfES, 2003, p.13

**Canadian Universities**

In Canada, the issue of competitive academic salaries is exacerbated by the proximity of the United States, which makes the lure of higher salaries even more attractive. The Federal Government in Canada has responded to this challenge by providing major funding increases for research in Canadian universities, thus easing the financial burden on the provinces, which constitutionally have the responsibility for university funding.

**United States Universities**

Universities in the USA have not been immune to the pressure on academic salaries from the private sector and from one another. Because of the availability of salary data, this competition among universities is continuous and well informed.

An example of the current salary pressures on state funded universities has been the phenomenon of business organizations providing targeted funding to supplement the salaries of university chief executives in order to prevent their being attracted to other universities or the private sector.

**Conclusions**

The increasing provision around the world in university student places and in research funding will continue to increase the demand internationally for academics. This pressure will be exacerbated by the coming retirement of a significant proportion of the existing academic workforce.

Difficulties in recruiting academic staff will continue because of the comparative attractions of the private sector labour market. Private sector positions are increasingly attractive not only because of their better salaries, but also because of the greater flexibilities being shown by employers in matters such as working hours and leave.

Because of the combination of these factors, it seems most likely that Australian universities are going to face increasing competition for high quality staff. Being able to respond flexibly to this challenge in individual cases will go only so far. Universities will need access to additional funds if they are to continue to attract and hold academic staff.

A range of reports have established that, internationally, academic salary relativities with the private and public sector have declined. Chapter 6 re-examines traditional Australian data and develops new ways of conceptualizing and measuring academic/private sector salary relativities.
CHAPTER 6

SALARY RELATIVITIES:
A BENCHMARKING APPROACH

Traditional methodologies

In his seminal research on academic salary comparisons Marginson (1991, p.50) suggested “If salary relativities remain on the agenda so will the issue of how to calculate the relative salary position of academics. This involves both methodological and socio-political questions. There is the question of ensuring that the salary comparisons are accurate in terms of their objectives and also the question of which comparisons are most appropriate.”

The fact that in the past a particular salary comparison was made does not justify the continued use of that comparison. The question is what is the significance of each salary comparison in the present? Marginson’s (1991) research analysed academic salary movements in comparison to:

- Prices – academic salaries in real terms (using CPI data)
- Average Weekly Earnings (AWE) – relative salary changes (using ABS AWE data)
- CSIRO salaries (senior lecturer to principal research scientist) (using csiro and academic salary scales)
- Senior public sector salaries (using senior lecturer and professor to senior public service salary scales)
- Public sector engineers (using academic and public sector engineering salary scales)
- New South Wales teachers (using academic and teaching salary scales)
- Private sector comparison engineers (using data from the Association of the Professional Engineers in Australia, The Royal Australian Chemical Institute)

After analysing this and other international academic salary comparative data Marginson confirmed that “there has been a relative decline in academic salaries since the 1970s. This decline is severe when the comparators used are prices, AWE or international academic salaries. If better information on private sector earnings was available, the decline in relation to some comparative private remuneration (for example accountants) would probably be even more severe.”

Marginson, 1991, p.70

At the time Marginson conducted his analysis a number of problems in developing such comparators were identified. In particular the chief problems in private sector academic salary comparisons were seen as “lack of information”. “The private sector is not one homogeneous sector. The academic labour market is linked to the private sector not in one unified labour market but in a large number of separate discipline specific labour markets with some fluidity and overlap...also the area of non-salary benefits need to be handled with care as these are more prevalent in the private sector...many academic professionals prefer to be compared with the self employed segment of the professionals concerned, rather than the wage and salary segment.”

Since this research was conducted in the early 1990s such salary relativity analysis has become more difficult and confronts greater methodological and technical difficulties. Although academic salary Average Weekly Earnings (AWE) comparisons and academic salary have continued to be undertaken (Chapman, 2002, p.8) comparisons with New South Wales teachers, CSIRO researchers, members of parliament and the public sector have fallen out of favour due in part to some of the technical difficulties in making comparisons.

In comparisons with the public sector, the development of ever more complex Senior Executive Service remuneration packages meant that there was no longer one point to compare professorial and other academic salaries. Similar issues also make comparisons with teachers, CSIRO researchers and members of parliament difficult. As well, the academic salary scales have undergone dispersion with the introduction of enterprise bargaining, and academic salary scales now represent award minimum rates and do not take account salary loadings, external income and supplementary payment; nevertheless, some traditional comparative data have been developed in this research. The following salary band comparator, Table 6.1, data has been developed for 2002.

The data reported for 2002 in Table 6.1 is static and based on nominal salaries. Time series and other analysis may be needed to develop more statistically valid comparators. Overall, the data confirms Marginson’s views that salary relativities are largely unchanged since the 1970s.
### Table 6.1 Salary Band Data

<table>
<thead>
<tr>
<th>Area of Occupation</th>
<th>Band A</th>
<th>Band B</th>
<th>Band C</th>
<th>Band D</th>
<th>Band E</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$37,000 - $52,000</td>
<td>$53,000 - $64,000</td>
<td>$65,000 - $78,000</td>
<td>$79,000 - $100,000</td>
<td>$101,000 - $102,000</td>
</tr>
<tr>
<td>CSIRO Salary Scale</td>
<td>Level 3 Step 2 – $38,319</td>
<td>Level 4 Step 3 – $53,091</td>
<td>Level 6 Step 2 – $62,094</td>
<td>Level 7 Step 2 – $80,648</td>
<td>Level 8 Step 2 – $93,727</td>
</tr>
<tr>
<td>Library Staff NSW Govt.</td>
<td>Library Technician Grade 1 Year 2 – $38,365</td>
<td>Library Technician Grade 2 Year 2 – $51,294</td>
<td>Library or Archivist Grade 2 Year 4 – $67,647</td>
<td>Library or Archivist Grade 4 Year 4 – $81,089</td>
<td>Library or Archivist Grade 5 Year 4 – $83,840</td>
</tr>
<tr>
<td>Library Staff used as basis for salary figures given.</td>
<td>Library Technician Grade 2 Year 3 – $47,830</td>
<td>Library or Archivist Grade 1 Year 2 – $38,356</td>
<td>Library or Archivist Grade 3 Year 1 – $58,851</td>
<td>Library or Archivist Grade 3 Year 2 – $63,158</td>
<td></td>
</tr>
<tr>
<td>Australian Nuclear Science and Technology Organisation - Research Scientists</td>
<td>Research Scientist – Class 6 $40,958</td>
<td>Research Scientist – Class 1 $53,441</td>
<td>Research Scientist – Class 3 $56,696</td>
<td>Research Scientist – Class 3 $58,396</td>
<td></td>
</tr>
<tr>
<td>Teaching</td>
<td>Unpromoted Teachers Step 4 $41,000 to Step 13 $56,516</td>
<td>Executive Teacher – Primary School $58,200</td>
<td>Primary School Principal Grade 3 (PPS) $76,780</td>
<td>Primary School Principal Grade 1 (PPS) $86,778</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Assistant Principal Primary School – $59,947</td>
<td>Head Teacher TAFE Band 2 – $65,757</td>
<td>Primary School Principal Grade 2 (PPS) $80,023</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Primary School Principal Grade 6 (PPS) $63,853</td>
<td>Senior Head Teacher TAFE Step 1 – $65,757</td>
<td>High School Principal Grade 2 (PHS) $86,748</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Head Teacher in TAFE Band 1 – $60,570</td>
<td>Senior Head Teacher TAFE Step 2 – $67,385</td>
<td>High School Principal Grade 1 (PHS) $90,572</td>
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</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>TAFE Cluster Manager and Manager, Education and Training Resource Centre $98,122</td>
<td></td>
</tr>
<tr>
<td>Nursing NSW Nurse’s Association Data</td>
<td>Mothercraft Nurse 5th Year $36,065</td>
<td>Clinical Nurse Consultant Grade 1 Year 1 – $58,528</td>
<td>Clinic Nurse Consultant Grade 3, 4th Year $65,692</td>
<td>Nurse Manager Grade 7, 1st Year $81,215</td>
<td>Base Salary $98,800 as at 1st July 2002 to which the salary of office and allowances are added to. *</td>
</tr>
<tr>
<td></td>
<td>Registered Nurse – 4th Year</td>
<td>Nurse Manager Grade 1 Year 1 $58,528</td>
<td>Nurse Manager Grade 4, 1st Year $68,082</td>
<td>Nurse Manager Grade 9, 2nd Year $94,364</td>
<td>Base Salary: $98,800 to which the salary of office and allowances are added to. *</td>
</tr>
<tr>
<td></td>
<td>Registered Nurse – 7th Year</td>
<td>Nurse Educator 4th Year – $59,869</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Clinical Nurse Specialist $48,698</td>
<td>Nursing Unit Manager – Level III $63,125</td>
<td></td>
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<td></td>
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<tr>
<td></td>
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<td></td>
<td></td>
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</tr>
</tbody>
</table>

* Base Salary: $98,800 as at 1st July 2002 to which the salary of office and allowances are added to. *

The book *What Job Pays* provides something of a guide to average local pay differentials, though averages greatly understate total pay for those reaching the peaks of their professions. It puts the average lifetime earnings of a university lecturer at around $2.3 million. Other university graduates, however, can earn more. Pharmacists average around $2.5 million, as do electrical engineers. Computing professionals are a bit higher at $2.6 million. Geologists hit the $3 million mark, as do lawyers, and general practitioners and corporate treasurers reach $3.6 million and $3.7 million respectively. While academics do tend to be motivated by the intrinsic rewards of the job, that motivation is weakest in areas most necessary to professional training. In business and administration, for example, 66 per cent say they are motivated by intrinsic interest, compared to 81 per cent in the humanities and social sciences. About a third of business academics are open to temptation from business. It is surely not completely a coincidence that it is the areas of study with high-paying professions recruiting from the same talent pool that are rated worst for teaching by their students.


Apart from the considerable research comparing academic salaries and average weekly earnings (Chapman 2002) the fragmentary nature of research in comparing academic and private professional salaries is evidenced by the literature. As Marginson admitted:

at this stage we lack detailed models of most of those specific public and private sector labour markets within Australia which affect the supply of and demand for academic labour ... there is also a lack of data on the salaries paid in some of these labour markets....

Marginson, 1991, p. 33

**Benchmarking**

Benchmarking has been described by Camp, 1989, as a systematic and continuous process that continuously measures and compares an organisation against leaders anywhere in the world, to gain information which will help the organisation take action to improve its performance. During the 1990s benchmarking came to be seen as basically involving five steps.

1. identification of the object of study and comparison
2. the collection and analysis of the comparative data
3. selection and identification of superior performance in benchmarking partners.
4. use of this comparative data to set performance goals for process and method improvement
5. implementation of new management plans and the monitoring of results.

Further applications of benchmarking methodologies had also identified different types of benchmarking based around the object of comparison. Benchmarking practices became generically classified according to the nature of the object of study of the benchmarking, and the sorts of comparisons made. Process benchmarking came to describe benchmarking that compared operations or work practices for certain types of business processes, or other workplace structures that involved a series of operations. Product benchmarking described benchmarking which compared products or services, the outputs of particular processes operating in the business, and strategic benchmarking became used in describing comparisons of organisational structures or management practices or business strategies.

Competitive benchmarking came to describe those comparisons with direct competitors, both in business or in other organisations. Competitive benchmarking involved comparisons of the outputs of businesses, either services or products. Another term applied to this process is reverse engineering, where a competitor's products are broken down, inspected and explored, and then compared to the products and services provided by the businesses undertaking the benchmarking. Functional benchmarking came to describe benchmarking with best practice. Functional benchmarking involves the identification of best practice, and the measurement of gaps between best practices and current practices. Application of benchmarking in workplace and industrial relations is relatively rare; however, comparative benchmarking among organizations is popular because:

the key to improvement lies in understanding how critical functions are best performed rather than simply measuring outcomes

Kelly, 2001, p.2

The Department of Education, Training and Youth Affairs funded a benchmarking exercise for Australian universities and has published Benchmarking: A Manual for Australian Universities by McKinnon, Walker and Davis (2000). This project developed 67 benchmarks that are currently being trialled. The 67 benchmarks include four specifically dealing with staffing issues. These issues include:

- Strategic human resource planning
- Management of workforce
- Workforce diversity
- Career development
Although these benchmarks are intended to identify best practice staffing processes for application across the sector; they have neglected salary considerations and many of the issues that are vital in EBA negotiations; however, the career development and strategic human resource planning benchmarks are crucial constructs in considering salary relativity issues.

In the development of the benchmarks, salary scales were seen as a constant, common across the sector, and providing a measure that could be used to compare the ability of universities to attract and retain appropriate staff. This conceptualization of salary scales ignores the current practices identified in Chapter 5.

The project did showcase benchmarking methodologies in developing meaningful comparisons for universities. “Complex institutions, to keep relevant, must respond successfully to the massive changes now challenging. Benchmarking thus needs not only to identify successes to date but also vital signs of adaptation to the future” (McKinnon et al, 2000) Benchmarking involves the following steps:

1. Development of a rationale for each individual benchmark.
2. Explication and conceptualization of the benchmark.
3. Identification of appropriate performance measures.
4. Measurement and analysis of the measure.
5. Comparison of measures to indicate results.

Two kinds of benchmark may be readily distinguished: criterion reference where the attributes of good practice in a functional area are measured and compared; and quantitative benchmarks, where normative and competitive levels of achievement are measured using comparisons to averages. These distinguish where practice is quantifiably different in some way.

Often quantitative differences will signal good practice; sometimes poor practice.

According to McKinnon

...the development of benchmarks involves making judgements about what matters and how it is to be measured. The rationale for each benchmark and the objectivity required of ratings should, however, have face validity.

McKinnon et al, 2002, p. 8

Benchmarking salary relativities

To overcome the problems identified and discussed previously in developing comparative private professional and academic salary data, the project team developed a benchmark approach to attempt to compare salary relativities. This benchmarking research project involved the following steps and processes

1. Choice of job families
2. Selection of academic salary scales
3. Benchmarking of private sector positions within academic salary scales
4. Comparison of job descriptions of private sector positions with academic positions at the same salary level.
5. Replication of this analysis in the US and Canada

These steps and processes are described below.

Choice of job families

For this benchmarking project, the team commissioned a leading international firm, Mercer Human Resource Consulting to undertake a remuneration benchmarking study of private sector positions, job descriptions and salaries in four job families in Australia, the USA and Canada. Mercer Human Resource Consulting maintains a worldwide and extensive database of over 300,000 public and private sector positions and salary scales and job descriptions.

Job families are a classification of private sector occupational groups that reflect common training and expertise. Human resource firms typically develop job families as a way of classifying skills and experiences across a range of occupations. The project team required Mercer to collect data on four job families:

- information technology
- finance and administration
- engineering/science
- human resources

The job families were selected in accordance with the project brief to compare salaries between universities and a range of professional occupations and to compare within those job families where clear salary pressure is clearly evident.

For example the science and engineering job families that Mercer collected data on reflected several private sector occupations covered by the ABS employment classification data.

Crucial to the benchmarking approach adopted in this project was the development of descriptions of the benchmark positions covered in the study. These are presented in the associated documents entitled ‘Position Descriptions’. Definitions of the terms used in this research are provided in the separate benchmarking documents submitted with the report.
Choice of academic salary scales for comparison

The selection of the salary scales for the benchmarking process was based on analysis of current (2002) EBA negotiated salary scales. Academic salary scales from the current round (3rd) of EBA agreements for the 12 universities involved in the structured interviews were procured and analysed.

One of the participating universities without an EBA was not included in the analysis. Since the introduction of enterprise bargaining in 1993, salary and employment condition negotiations have produced small but significant salary scale dispersions across the sector. Despite the intention of the NTEU to restrict salary dispersion and significant salary scale differences, “individual enterprise is responsive to local conditions” and different agreements and outcomes have arisen in the sector.

The project team chose the median salary scale from the 11 analysed, and used this five step salary scale as the comparator for the analysis of the private sector job positions undertaken in the Mercer analysis. The salary scale was rounded down.

For these scales Mercer identified positions within their general market database that command salaries within those following five academic salary scales. Table 6.2 indicates the academic salary scales:

- Associate Lecturer ($37,000 - $51,000)
- Lecturer ($37,000 - $64,000)
- Senior Lecturer ($65,000 - $76,000)
- Reader / Associate Professor ($79,000 - $88,000)
- Professor ($101,000 - $102,000)

Since some private sector salaries are in excess of the five level academic salary scales, the project also identified private sector positions in Australia falling within a salary range of A$100,000 to A$250,000. (see Table 6.2)

Identification of private sector salaries and positions within the academic salary scales

For the salary scales indicated Mercer identified a range of corresponding private sector positions with fixed salaries within these specific scales from the four job families. For this analysis the construct of a fixed salary was used. A fixed salary is described as the total of the following items:

- Base salary
- Vehicle/entertainment allowances
- Parking
- Annual leave loading
- Private travel
- Superannuation (salary sacrifice)
- Award allowances
- Other cash payments (other costs)
- Company cars
- Superannuation (company contribution including the SGC)
- Loans
- Fringe benefits and non fringe benefits
- Fringe benefits tax.

The fixed salary analysis was developed as an attempt to equate private and university salaries. This fixed salary does not include significant components of private sector remuneration such as performance pay, profit sharing and bonuses; however, it does include the range of items indicated in the list. University salary data reported does not include superannuation, a considerable benefit in university remuneration.

In the US and Canadian analysis, fixed salary was too difficult to develop. As a result base salary was used. Base salary is defined as annual salary excluding any other additional payments; it is sometimes simply referred to as salary.

The salary data is expressed as an inter quartile range for the salary selected. The inter quartile range is described in the following way:

Lower quartile: The lower quartile is the mid point of the lower half of the sample. That is, the lower quartile is the score below which 25 per cent of the cases fall and above which 75 per cent fall.

Median: The median is the mid point of a range of figures. It is calculated by sorting all the values into ascending order then locating the value above which 50 per cent of the scores fall and below which 50 per cent of the scores fall.

Upper quartile: The upper quartile is the mid point of the upper half of the sample. The upper quartile is the score below which 75 per cent of cases fall and above which 25 per cent fall.

The Tables 6.2, 6.3, 6.4 and 6.5 for the four job families show the results of this benchmarking analysis. The academic salary scales and positions are shown on the left and the associated private sector positions and salary ranges are shown on the right.
### Table 6.2 Benchmarking private sector positions within academic salary scales

**Information Technology Positions data - Australia**

<table>
<thead>
<tr>
<th>Academic salary scale (AS)</th>
<th>IT positions</th>
</tr>
</thead>
<tbody>
<tr>
<td>100,000 – 250,000</td>
<td>Principal MIS Executive (162117, 194355, 227405)</td>
</tr>
<tr>
<td></td>
<td>Communications Specialist/Consultant (61979, 81720, 106689)</td>
</tr>
<tr>
<td></td>
<td>Manager, Information Systems (38364, 121894, 145133)</td>
</tr>
<tr>
<td></td>
<td>Systems Manager (87496, 102041, 116194)</td>
</tr>
<tr>
<td>101,000 / 102,000</td>
<td>Project Manager (90477, 104313, 121113)</td>
</tr>
<tr>
<td></td>
<td>Computer Operations Manager (88020, 100866, 125759)</td>
</tr>
<tr>
<td>79,000 – 88,000</td>
<td>Senior Analyst Programmer (78143, 87294, 94654)</td>
</tr>
<tr>
<td></td>
<td>Experienced Analyst Programmer (67123, 76689, 88839)</td>
</tr>
<tr>
<td></td>
<td>Senior Programmer (52486, 78249, 93921)</td>
</tr>
<tr>
<td></td>
<td>Database Administrator (67165, 80500, 90399)</td>
</tr>
<tr>
<td>65,000 – 76,000</td>
<td>LAN Administrator (56860, 65340, 75600)</td>
</tr>
<tr>
<td></td>
<td>Senior Software Analyst (61479, 76628, 101021)</td>
</tr>
<tr>
<td></td>
<td>Information Technology Training Manager (58240, 63768, 77180)</td>
</tr>
<tr>
<td></td>
<td>Database Programmer (65553, 73105, 83835)</td>
</tr>
<tr>
<td></td>
<td>Helpdesk Manager (55668, 66384, 82,000)</td>
</tr>
<tr>
<td></td>
<td>Systems Analyst (65961, 74649, 78824)</td>
</tr>
<tr>
<td>53,000 – 64,000</td>
<td>LAN Administrator (56860, 65340, 75600)</td>
</tr>
<tr>
<td></td>
<td>Information Technology Training Manager (58240, 63768, 77180)</td>
</tr>
<tr>
<td></td>
<td>Helpdesk Manager (55668, 66384, 82,000)</td>
</tr>
<tr>
<td></td>
<td>PC Support Specialist (54673, 57000, 64937)</td>
</tr>
<tr>
<td></td>
<td>Analyst Programmer (59616, 68951, 80052)</td>
</tr>
<tr>
<td>37,000 – 51,000</td>
<td>Helpdesk Officer (39480, 43727, 47760)</td>
</tr>
<tr>
<td></td>
<td>Programmer (44494, 52234, 61184)</td>
</tr>
<tr>
<td></td>
<td>Trainee Programmer (37033, 38657, 49645)</td>
</tr>
<tr>
<td></td>
<td>Senior Computer Operator (49930, 55300, 64624)</td>
</tr>
<tr>
<td></td>
<td>Computer Operator (40383, 47172, 54518)</td>
</tr>
<tr>
<td></td>
<td>Data Control Supervisor (42307, 49500, 53937)</td>
</tr>
<tr>
<td></td>
<td>User Doc Specialist/Technical Writer (45925, 57633, 65340)</td>
</tr>
</tbody>
</table>
### Table 6.3 Benchmarking private sector positions within academic salary scales

**Finance and Administration Positions data - Australia**

<table>
<thead>
<tr>
<th>Academic salary scale (AS)</th>
<th>Finance and Administration positions (Fixed: AS; Q1; median; Q2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>100,000 – 250,000</td>
<td>• Principal Legal Executive (171621, 210201, 268697)</td>
</tr>
<tr>
<td></td>
<td>• Principal Finance Executive (181349, 217117, 268566)</td>
</tr>
<tr>
<td></td>
<td>• Principal Administration Executive (146779, 169731, 208529)</td>
</tr>
<tr>
<td></td>
<td>• Principal Planning Executive (148501, 177072, 210062)</td>
</tr>
<tr>
<td></td>
<td>• Principal Internal Auditor (119322, 144511, 160885)</td>
</tr>
<tr>
<td></td>
<td>• Corporate Treasurer (126875, 146726, 213040)</td>
</tr>
<tr>
<td></td>
<td>• Financial Controller (120008, 135589, 155968)</td>
</tr>
<tr>
<td></td>
<td>• Division Finance Manager (111927, 121565, 138025)</td>
</tr>
<tr>
<td></td>
<td>• Taxation Manager (111228, 139320, 180305)</td>
</tr>
<tr>
<td>101,000 / 102,000</td>
<td>• Legal Officer (75449, 99628, 119288)</td>
</tr>
<tr>
<td></td>
<td>• Corporate Planner/Analyst (90776, 107979, 118409)</td>
</tr>
<tr>
<td></td>
<td>• PR/Corporate Affairs Manager (93960, 122448, 143847)</td>
</tr>
<tr>
<td></td>
<td>• Corporate Superannuation Manager (92748, 111075, 126964)</td>
</tr>
<tr>
<td></td>
<td>• Corporate Services/Facilities Manager (84273, 100000, 114969)</td>
</tr>
<tr>
<td></td>
<td>• Risk Manager (100765, 118712, 134990)</td>
</tr>
<tr>
<td>79,000 – 88,000</td>
<td>• Legal Officer (75449, 99628, 119288)</td>
</tr>
<tr>
<td></td>
<td>• Internal Auditor (61268, 72838, 86888)</td>
</tr>
<tr>
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<td>• Publications Editor (66014, 71728, 82515)</td>
</tr>
<tr>
<td></td>
<td>• Corporate Services/Facilities Manager (84273, 100000, 114969)</td>
</tr>
<tr>
<td></td>
<td>• Division/State/Branch Accountant (86800, 86830, 99551)</td>
</tr>
<tr>
<td></td>
<td>• Factory/Plant Accountant (78911, 104279, 119272)</td>
</tr>
<tr>
<td></td>
<td>• Senior Cost Accountant (75165, 80137, 93435)</td>
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<tr>
<td></td>
<td>• Senior Management Accountant (84220, 101745, 122073)</td>
</tr>
<tr>
<td></td>
<td>• Management Accountant (68286, 77542, 92000)</td>
</tr>
<tr>
<td></td>
<td>• Senior Financial Accountant (69000, 85033, 96309)</td>
</tr>
<tr>
<td></td>
<td>• Senior Taxation Accountant (80473, 103800, 122864)</td>
</tr>
<tr>
<td></td>
<td>• Taxation Accountant (62368, 69678, 82700)</td>
</tr>
<tr>
<td>65,000 – 76,000</td>
<td>• Internal Auditor (61268, 72838, 86888)</td>
</tr>
<tr>
<td></td>
<td>• Secretary to Chief Executive (53378, 60937, 70047)</td>
</tr>
<tr>
<td></td>
<td>• Publications Editor (66014, 71728, 82515)</td>
</tr>
<tr>
<td></td>
<td>• Division/State/Branch Accountant (68600, 86830, 99551)</td>
</tr>
<tr>
<td></td>
<td>• Senior Cost Accountant (75165, 80137, 93435)</td>
</tr>
<tr>
<td></td>
<td>• Management Accountant (68286, 77542, 92000)</td>
</tr>
<tr>
<td></td>
<td>• Senior Financial Accountant (69000, 85033, 96309)</td>
</tr>
<tr>
<td></td>
<td>• Financial Accountant (54920, 66500, 77942)</td>
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<tr>
<td></td>
<td>• Taxation Accountant (62368, 69678, 82700)</td>
</tr>
<tr>
<td></td>
<td>• Credit Manager (61875, 75462, 91494)</td>
</tr>
<tr>
<td></td>
<td>• Administration Manager (49259, 61920, 79678)</td>
</tr>
<tr>
<td>53,000 – 64,000</td>
<td>• Internal Auditor (61268, 72838, 86888)</td>
</tr>
<tr>
<td></td>
<td>• PA to Senior Executive (47323, 51174, 56453)</td>
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<td>• Secretary to Chief Executive (53378, 60937, 70047)</td>
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<tr>
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<td>• Librarian (45597, 57000, 64507)</td>
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<tr>
<td></td>
<td>• Cost Accountant (57610, 61153, 64197)</td>
</tr>
<tr>
<td></td>
<td>• Financial Accountant (54920, 66500, 77942)</td>
</tr>
<tr>
<td></td>
<td>• Taxation Accountant (62368, 69678, 82700)</td>
</tr>
<tr>
<td></td>
<td>• Credit Manager (61875, 75462, 91494)</td>
</tr>
<tr>
<td></td>
<td>• Office Manager/Supervisor (43680, 50842, 63768)</td>
</tr>
<tr>
<td></td>
<td>• Administration Manager (49259, 61920, 79678)</td>
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### Table 6.4 Benchmarking private sector positions within academic salary scales

**Engineering and Scientific Positions data - Australia**

<table>
<thead>
<tr>
<th>Academic salary scale [AS]</th>
<th>Engineering and Scientific positions: (Fixed salary AS; Q1; median; Q3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>100,000 – 250,000</td>
<td>Principal R &amp; D Executive (157239, 177052, 230092)</td>
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<tr>
<td></td>
<td>Principal Engineering Executive (140676, 171108, 215239)</td>
</tr>
<tr>
<td></td>
<td>Chief Engineer (104714, 119133, 133268)</td>
</tr>
<tr>
<td></td>
<td>Chief Chemist (104712, 121108, 133756)</td>
</tr>
<tr>
<td>101,000 / 102,000</td>
<td>Experienced Project Engineer (79980, 91805, 104930)</td>
</tr>
<tr>
<td></td>
<td>Experienced Plant Engineer (75679, 86607, 111400)</td>
</tr>
<tr>
<td></td>
<td>Experienced Industrial Engineer (72326, 84457, 105985)</td>
</tr>
<tr>
<td></td>
<td>Experienced Maintenance Engineer (76258, 104620, 110397)</td>
</tr>
<tr>
<td></td>
<td>Experienced Development Engineer (72326, 77138, 102504)</td>
</tr>
<tr>
<td></td>
<td>Senior Project Manager - Development (77631, 93971, 123958)</td>
</tr>
<tr>
<td></td>
<td>National Service Manager (86082, 103791, 112258)</td>
</tr>
<tr>
<td></td>
<td>Quality Assurance Manager (75271, 94848, 111888)</td>
</tr>
<tr>
<td></td>
<td>Laboratory Manager (74347, 96675, 108480)</td>
</tr>
<tr>
<td>79,000 – 88,000</td>
<td>Experienced Project Engineer (79980, 91805, 104930)</td>
</tr>
<tr>
<td></td>
<td>Experienced Design Engineer (69142, 82027, 101000)</td>
</tr>
<tr>
<td></td>
<td>Experienced Plant Engineer (75679, 86607, 111400)</td>
</tr>
<tr>
<td></td>
<td>Plant Engineer (54037, 63360, 95450)</td>
</tr>
<tr>
<td></td>
<td>Experienced Industrial Engineer (72326, 84457, 105985)</td>
</tr>
<tr>
<td></td>
<td>Experienced Maintenance Engineer (76258, 104620, 110397)</td>
</tr>
<tr>
<td></td>
<td>Experienced Development Engineer (72326, 77138, 102504)</td>
</tr>
<tr>
<td></td>
<td>Senior Project Manager - Development (77631, 93971, 123958)</td>
</tr>
<tr>
<td></td>
<td>Chief Drafter (68046, 78022, 100803)</td>
</tr>
<tr>
<td></td>
<td>Senior Technical Officer (63217, 74910, 94475)</td>
</tr>
<tr>
<td></td>
<td>National Service Manager (86082, 103791, 112258)</td>
</tr>
<tr>
<td></td>
<td>State/Branch Service Manager (76680, 86400, 99591)</td>
</tr>
<tr>
<td></td>
<td>Quality Assurance Manager (75271, 94848, 111888)</td>
</tr>
<tr>
<td></td>
<td>Scientific Officer Level 3 (61560, 76535, 82480)</td>
</tr>
<tr>
<td></td>
<td>Laboratory Manager (74347, 96675, 108480)</td>
</tr>
<tr>
<td>65,000 – 76,000</td>
<td>Project Engineer (58300, 62889, 78636)</td>
</tr>
<tr>
<td></td>
<td>Experienced Design Engineer (69142, 82027, 101000)</td>
</tr>
<tr>
<td></td>
<td>Design Engineer (53091, 58520, 66960)</td>
</tr>
<tr>
<td></td>
<td>Plant Engineer (54037, 63360, 95450)</td>
</tr>
<tr>
<td></td>
<td>Experienced Industrial Engineer (72326, 84457, 105985)</td>
</tr>
<tr>
<td></td>
<td>Maintenance Engineer (62651, 68082, 70819)</td>
</tr>
<tr>
<td></td>
<td>Experienced Development Engineer (72326, 77138, 102504)</td>
</tr>
<tr>
<td></td>
<td>Research &amp; Dev. Engineer (58373, 64322, 68688)</td>
</tr>
<tr>
<td></td>
<td>Senior Design Drafter (53570, 62874, 69850)</td>
</tr>
<tr>
<td></td>
<td>Senior Technical Officer (63217, 74910, 94475)</td>
</tr>
<tr>
<td></td>
<td>Field Service Representative (52367, 58721, 72837)</td>
</tr>
<tr>
<td></td>
<td>Senior Chemist (63997, 69136, 76921)</td>
</tr>
<tr>
<td></td>
<td>Experienced Chemist (58762, 67935, 73235)</td>
</tr>
<tr>
<td></td>
<td>Scientific Officer Level 3 (61560, 76535, 82480)</td>
</tr>
<tr>
<td></td>
<td>Environmental Scientist (57224, 59394, 68194)</td>
</tr>
</tbody>
</table>
### Table 6.4 (cont)

<table>
<thead>
<tr>
<th>Salary Range</th>
<th>Positions</th>
</tr>
</thead>
</table>
| 53,000 – 64,000 | Project Engineer (58300, 68289, 78636)  
Design Engineer (53091, 58520, 66960)  
Plant Engineer (54037, 63360, 95450)  
Industrial Engineer (56310, 61743, 65970)  
Maintenance Engineer (62651, 68082, 70819)  
Research & Dev. Engineer (58373, 64322, 68688)  
Senior Design Drafter (53570, 62874, 69850) | Design Drafter (40712, 49483, 66351)  
Field Service Representative (52367, 58721, 72837)  
Service Technician (41170, 48600, 58270)  
Experienced Chemist (58762, 67935, 73235)  
Chemist (46331, 53670, 55681)  
Scientific Officer Level 3 (61560, 76535, 82480)  
Environmental Scientist (57224, 59394, 68194) |
| 37,000 – 51,000 | New Graduate Engineer (42175, 46037, 49001)  
Design Drafter (40712, 49483, 66351)  
Detail Drafter (42818, 44165, 50475)  
Technical Officer (47001, 50249, 51222) | Service Technician (41170, 48600, 58270)  
Chemist (46331, 53670, 55681)  
Scientific Officer Level 1 (38733, 44063, 51520)  
Laboratory Technician (42315, 45082, 51345) |

### Table 6.5 Benchmarking private sector positions within academic salary scales

**Human Resources Positions data - Australia**

<table>
<thead>
<tr>
<th>Academic salary scale (A$)</th>
<th>Human Resources positions data (Fixed salary A$: Q1, median, Q3)</th>
</tr>
</thead>
</table>
| 100,000 – 250,000 | Principal Human Resources Executive (156808, 182301, 220908)  
Human Resources Manager (86209, 105342, 124769)  
Compensation & Benefits Manager (87800, 105221, 139041)  
Division Human Resources Manager (91613, 102790, 123900) | Industrial Relations Manager (107109, 120189, 138486)  
Training Manager (76895, 91356, 110922)  
Plant Personnel Manager (73550, 94742, 110517)  
Organisation Development Manager (81879, 94889, 124802) |
| 101,000 / 102,000 | Human Resources Manager (86209, 105342, 124769)  
Compensation & Benefits Manager (87800, 105221, 138041)  
Training Manager (76895, 91356, 110922) | Training Manager (76895, 91356, 110922)  
Plant Personnel Manager (73550, 94742, 110517)  
Organisation Development Manager (81879, 94889, 124802) |
| 79,000 – 88,000 | Human Resources Manager (86209, 105342, 124769)  
Compensation & Benefits Manager (87800, 105221, 138041)  
Training Manager (76895, 91356, 110922) | Plant Personnel Manager (73550, 94742, 110517)  
Organisation Development Manager (81879, 94889, 124802) |
| 65,000 – 76,000 | Plant Personnel Manager (73550, 94742, 110517)  
Industrial Relations Specialist (65431, 71239, 72640) | OHS Specialist (51001, 56207, 67658)  
Payroll (HRIS) Manager (55375, 64298, 75600) |
| 53,000 – 64,000 | Training Specialist (50482, 56452, 63589)  
HR Generalist (49042, 54958, 63925)  
OHS Specialist (51001, 56207, 67658) | Industrial Nurse (49206, 58442, 61380)  
Payroll (HRIS) Manager (56375, 64298, 75600)  
Senior Payroll Officer (45976, 51769, 57686) |
| 37,000 – 51,000 | HR Generalist (49042, 54958, 63925)  
Payroll Officer (41016, 45845, 52114) | Industrial Nurse (49206, 58442, 61380)  
Senior Payroll Officer (45976, 51769, 57686) |
CHAPTER 5 Academic Salary Relativity Research

Comparison of private sector and academic positions

Information Technology Positions

Of the professions selected by the project team for comparison with academic positions the information technology job family is the most comparable.

In many instances universities are competing directly with the private sector and salaries are a reflection of shortages of skilled labour in both the private and public sectors.

Over the period June to December 2002, it was not unusual for Australian universities to offer recruits in IT salary loadings or appointment at a higher salary level.

The information technology sector in universities values and maintains close ties with industry. Over the past six months twelve Australian universities included industry experience or strong links with industry in their advertised selection criteria when recruiting Information Technology academics.

One university advertised recently for a lecturer in information technology. While they sought applicants with a doctoral degree, they also encouraged applications from candidates with significant business or professional experience who did not have a relevant doctoral degree.

An example of a private sector position description within this salary range is Trainee Programmer – who is paid in the salary range $37,033, $38,657, $49,645

Trainee Programmer

Position reports to:
Programmer or Senior Programmer
Primary objective:
Assist, under close supervision, with the writing, testing and maintenance of computer programs and develop an understanding and knowledge of company policy in relation to programming.
Specific accountabilities:
• Code simple sub-routines and modules which have been designed by an experienced programmer.
• Become familiar with program specifications.
• Develop knowledge of company policy in relation to programming.
• Perform other programming duties as directed.
Matching indicators:
Incumbent would have less than one year’s experience, with a three to four year degree or diploma.

Associate Lecturer ($37,000-$51,000)

At this salary level, IT positions in the private sector identified by MERCER typically require a level of experience ranging from one to six years and formal qualifications ranging from nil to Higher School Certificate (Year 12) to a degree or diploma.

The private sector position matching indicators for positions with a median salary clearly within the academic salary range $37,000-$51,000 are:
• Helpdesk Officer - Sound knowledge of software and hardware products and PC Desktop/LAN operations
• Trainee Programmer - Less than one year’s experience, with a three or four year degree or diploma
• Computer Operator - Level of experience varies from one to four years, with Higher School Certificate and possibly some form of further education in information technology.
• Data Control Supervisor - Four to six years as a data preparation operator with some prior supervisory experience.

What this benchmarking analysis demonstrates is how private sector salaries have influenced the academic labour market.

The traditional source of associate lecturers has been post graduate students undertaking research and research training. Because of the poor relative salaries at associate lecturer level compared to the private sector, potential research and post graduate students have been attracted to the private sector by the higher salaries on offer for positions requiring less training, skills and qualifications.

As well, there are features of the information technology industry which also impact of the range of motivation in choosing employment be it in the private sector or in universities. IT professionals are highly mobile and demonstrate enthusiasm for change. They regularly move for employment opportunities and career progression, enhancement and job security.

The situation in the IT labour market reported here is also evident in analyses of the US, Canadian, European and UK IT labour markets.

At the salary level of lecturer to senior lecturer ($53,000-$76,000) IT positions in the private sector typically require more than four years experience in the industry.
The validation study undertaken to support this analysis revealed that because of salary relativities no associate lecturers were being employed in IT at the university concerned. For appointment at the bottom of the lecturer scale significant loadings had to be paid to attract staff.

The private sector position matching indicators for positions with a median salary clearly within the academic salary range $53,000-$76,000 are:

**Lecturer ($53,000-$64,000)**

- **PC Support Specialist** - Substantial experience working with PCs and/or tertiary qualifications in a related discipline
- **Programmer** - One to three years programming experience, with a three or four year degree or diploma
- **Computer Operations Supervisor** - Some form of further education in data processing plus more than four years operating experience using similar computers and systems
- **Senior Computer Operator** - Higher School Certificate, possibly further education in data processing, and at least four years operating experience with computers and systems
- **User Documentation Specialist/Technical Writer** - Experience in writing/documentation or similar function, preferably with experience in an information technology environment

**Senior Lecturer ($65,000-$76,000)**

- **Information Technology Training Manager** - Extensive experience developing and delivering training, as well as experience managing an IT unit or similar training function.
- **LAN Administrator** - Experience in administering local area networks as well as a sound knowledge of personal computers/workstations or similar information technology function
- **Database Programmer** - Experience in database programming function or similar information technology user services function
- **Helpdesk Manager** - Three to five years experience in a help desk environment or similar IT services function
- **Systems Analyst** - Four to five years experience in software development and programming
- **Analyst Programmer** - Tertiary qualifications and more than three years experience as an applications programmer

**Business Analyst** - Knowledge of the development, implementation and support of business systems and a capacity to work with a range of personnel

**Experience Analyst Programmer** - Tertiary qualifications and three to five years experience

An example of a private sector position description within this salary range is Information Technology Training Manager who is paid in the salary range $58,240, $63,768, $77,180 between lecturer and senior lecturer.

**Information Technology Training Manager**

Position reports to:
User Services/Support Manager

Primary objective:
Plan, implement and manage training strategies to assist staff in developing skills to be productive in their use of information technology.

Specific accountabilities:
- Conduct and interpret training needs analyses to determine the information technology skills pool of an organisation.
- Develop training plans and programs consistent with business objectives and user needs.
- Actively seek new training business opportunities.
- Manage the development of training resources that could be used to implement a training program.
- Manage training facilities to ensure they meet workplace standards for both hardware and software.
- Monitor the quality of training delivery and provide appropriate feedback to members of the training team on their performance.
- Investigate and implement training programs that can gain accreditation from relevant bodies.
- Compare and evaluate a range of in-house and external training options.
- Develop training evaluation tools and monitor the data they capture to report on the effectiveness of training programs.
- Maintain currency with developments in the IT industry, as well as with other training practitioners, to ensure training delivery is of the highest quality.
- Build a team of well trained, competent IT trainers who are technically competent and have highly developed skills and knowledge in training methodology.
- Liaise with other IT managers to determine strategic IT directions and respond with appropriate training strategies.
• Build relationships with management and staff to promote the work of the training team and ensure the team's roles and responsibilities are understood.

Matching indicators:
Extensive experience developing and delivering training, as well as experience managing an IT training unit or similar training function.

This benchmarking analysis shows that there is a degree of convergence between the job descriptions of private and university sector positions. Private sector employment places a significant premium on current industry experience and on the job problem solving; however, typically the work of lecturer/senior lecturer incorporates the skills, experiences and capacities of both these positions.

Private sector positions with research responsibility include Systems Analyst (salary range $65,961, $74,649, $78,824) and Senior Programmer (salary range $52,486, $78,249, $93,399)

Systems Analyst
Position reports to:
Project Leader or Systems Manager
Primary objective:
Analyze and guide functions, operations, procedures and, physical systems. Investigate technical problems to establish, develop and design procedures for computerised data processing systems.

Specific accountabilities:
• Analyse and develop software requirements.
• Establish system specifications appropriate to the problem/s by consulting with management, administration and technical staff.
• Define and write program specifications.
• Estimate costs of systems and prepare cost-benefit analyses, definitions and schedules for management approval.
• Prepare flow charts, mathematical and other models of problems, and produce formalised solutions.
• Write programming specifications and prepare technical reports on the operation of systems.
• Test programs to eliminate errors to ensure that programs meet user requirements.
• Coordinate the preparation of software manuals and operation guides specifying methods of operation and maintenance of systems.

• In a small data centre environment may be required to assist in the programming and installation of the approved systems.

• At a more experienced level, may develop and conduct training courses on programming or systems analysis/design and direct project staff engaged on systems analysis.

• At a more experienced level, may investigate system changes likely to occur during the life of company systems and draft guidelines outlining anticipate requirements.

Matching indicators:
Typically, incumbents would have four to five years experience in software development and programming.

Associate Professor ($79,000-$88,000)
At this salary level IT positions in the private sector identified by MERCER typically require tertiary qualifications and five to ten years experience.

The private sector position matching indicators for positions with a median salary clearly within the academic salary range $79,000-$88,000 are:

• Communications Specialist/ Consultant- Three to four year degree or diploma and five to seven years experience in a communications/networking environment

• Senior Software Analyst- Tertiary qualifications and at least 10 to 15 years programming and analysis experience

• Senior Systems Analyst- Tertiary qualifications and five to ten years experience in software development and programming with four or more years in systems analysis.

• Experienced Analyst Programmer- Tertiary qualifications and three to five years experience

• Senior Programmer- Tertiary qualifications and up to five years programming experience, with exposure to a variety of programming projects

• Database Administrator- Some form of tertiary education and significant experience in either systems, programming or operations

Private sector positions with research responsibility include Senior Analyst Programmer salary- level ($78,143, $87,294, $94,654)

Senior Analyst Programmer
Position reports to:
Senior Systems Analyst, Project Leader or Systems Manager
CHAPTER 5 Academic Salary Relativity Research

Primary objective:
Undertake systems design from systems specifications and provide support in a project team to the development and improvement of existing software systems.

Specific accountabilities:
- Undertake systems design and code from specifications.
- Conduct comprehensive tests and prepare documentation for programming.
- Participate in the installation of minor system modifications and undertake system generation and initial integration using a pre-configured system as a base.
- Perform preliminary dumps analysis and software problem solving.
- Provide support to development, maintenance and operations project teams.
- Design and maintain housekeeping procedures and operational standards as directed.
- Undertake development of utility programs or defined components of software systems.

Matching indicators:
Typically, incumbents would have a tertiary qualification and more than five years programming experience.

Systems Manager
Position reports to:
Principal MIS Executive or DP Manager
Primary objective:
Control and coordinate the development and implementation of data processing procedures and the provision of advice to user departments to optimise the use of the company’s computer systems.

Specific accountabilities:
- Direct the overall maintenance and development of systems which are appropriate to the organisation’s needs.
- Direct overall systems analysis and design for specific applications and recommend priorities accordingly. Ensure that applications developed for different segments of the organisation are compatible.
- Act as systems adviser to user departments and liaise with senior management on systems issues as appropriate.
- Assist in the development of organisation methods to ensure workflow and from the data processing system takes place in a timely and efficient manner.
- Assist in the selection, installation and use of computing equipment and software. May liaise with software houses, consultants, etc on behalf of the department.
- Coordinate maintenance work and quality control.
- Examine methods of storing data, such as magnetic tape, microfilm and emerging technologies. Recommend new or alternative techniques and supervise their introduction.
- Supervise systems analysts and programmers in terms of day-to-day administration and allocate staff to meet agreed project targets.
- Assist in the preparation of computer budget proposals and estimate project workloads.
- Arrange for the training and development of staff engaged in systems analysis and lead discussions with members participating in systems definition and design strategy.

Matching indicators:
Tertiary qualifications and at least five to ten years MIS experience.

Professor ($101,000-$102,000)
At this salary level IT positions in the private sector identified by Mercer typically require tertiary qualifications and significant industry and resource management experience.

The private sector position matching indicators for positions with a median salary clearly within the academic salary range $101,000-$102,000 are:
- Systems Manager- Tertiary qualifications and at least five to ten years MIS experience
- Computer Operations Manager- Extensive experience in computer operations management, or similar information technology function, as well as knowledge of, and experience in managing resources

An example of a private sector position description within this salary range is Systems Manager who is paid in the salary ranges 87,496, $102,041, $116,194.
**Professor** ($100,000–$250,000)

At this level tertiary qualifications are often required as well as extensive management experience.

The private sector position matching indicators for positions with a median salary clearly within the academic salary range $101,000–$250,000 are:

- **Manager, Information Systems**- Three to five year degree or diploma and at least ten years MIS experience
- **Project Manager**- Tertiary qualifications and at least ten years experience as a computing professional
- **Principal MIS Executive**- 3 to 5 year degree or diploma and over 15 years experience in an information systems environment, with at least 30 staff and an installation cost greater than $900,000

An example of a private sector position description within this salary range is Manager, Information Systems who is paid in the salary range $98,364, $121,894, $145,133. A professor would be expected to carry out all these duties as well as actively research and publish.

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**Manager, Information Systems**

Position reports to:

Principal MIS or Finance and Administration Executive or Chief Executive

Primary objective:

Plan and direct the information processing activities of the organisation and coordinate the effective design, implementation and operation of IS systems and applications.

Specific accountabilities:

- Plan, develop and direct the introduction and operation of IT systems and their development, maintenance and operating priorities.
- Plan and coordinate all investigations, feasibility studies and surveys of proposed and existing IS and machine applications for agreement with senior management.
- Guide the selection, installation and use of computing equipment and software.
- Maintain an up-to-date knowledge of new equipment, systems and programming techniques appropriate to the organisation.
- Participate in the familiarisation of key management with data processing techniques.
- Control and recommend operations and development budgets.
- Control the security of information systems.
- Direct maintenance work and quality control to ensure the efficient and timely operation of the IT function.
- Monitor the IT operations and develop improvements.
- Control the selection, development and training of IT professionals and other staff and monitor their performance.
- May provide help desk services.
- Control the allocation of staffing within IT locations.

Matching indicators:

Typically, incumbents have a level of skill commensurate with a three to five year degree or diploma and at least 10 years MIS experience.

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**Engineering and Scientific Positions**

A number of the universities interviewed commented that engineering faculties are having difficulty in recruiting and retaining academic staff at some levels. This is particularly true at associate lecturer level. As a result universities are concerned that they are recruiting staff from a diminishing pool of suitable people.

**Associate Lecturer** ($37,000–$51,000)

At this level engineering positions in the private sector identified by Mercer typically require a level of experience ranging from nil to five years. Only one position required a university degree.

The private sector position matching indicators for positions with a median salary clearly within the academic salary range $37,000–$51,000 are:

- **New Graduate Engineer**- Four year degree
- **Detail Drafter**- Completed an apprenticeship and two years experience
- **Technical Officer**- Post school qualifications and five years experience
- **Service Technician**- Electronics Certificate

An example of a private sector position description within this salary range is New Graduate Engineer- who is paid in the salary range $42,175, $46,037, $49,001)
CHAPTER 5 Academic Salary Relativity Research

New Graduate Engineer
Position reports to:
Experienced Engineer, Engineering Project Leader or Plant Supervisor
Primary objective:
Participate in engineering assignments under close supervision. Assignments may involve research, product development, laboratory testing, design, installation, commissioning of equipment, maintenance or construction.
Specific accountabilities:
- Use established procedures, gather and correlate basic data and perform detailed or routine engineering duties and relatively simple tests.
- Work on the less complicated aspects of the design of specific parts or assemblies and the simpler phases of minor projects, where seasoned professional evaluation and ingenuity are not normally required.
- Relieve supervising engineer of minor details.
- Assign work to technicians and check results, but not on a continuing supervisory basis.
- Act as trouble shooter in a plant to ensure scheduled production is met.
- Measure plant costs, efficiencies, yields and quality of product as directed.
- Work with maintenance engineers, shift supervisor and maintenance foreman to improve maintenance procedures and plant equipment.
- Assist in planning and implementing safety, loss control and environmental programs.

Matching indicators:
Four year degree in engineering, may have up to four years experience since graduation. Equates to Grade 1 Professional Engineer, a qualified engineer who is a graduate (Group A) under Metal Industry Award. Equivalent to APESMA Level 1.

In the private sector the entry position is New Graduate Engineer. Here the salary level is equivalent to that of associate lecturer. The responsibilities are narrower than the equivalent academic position and the level of accountability is much lower.

Lecturer to Senior Lecturer ($53,000- $76,000)
At this salary level Engineering positions in the private sector typically require three to ten years experience and a four year degree.

The private sector position matching indicators for positions with a median salary clearly within the academic salary range $53,000- $76,000 are:
- **Design Engineer**: Tertiary qualifications and more than five years experience, receives regular but not detailed supervision
- **Plant Engineer**: Four year degree and at least eight to ten years experience
- **Industrial Engineer**: Four year degree and five to ten years experience
- **Project Engineer**: Tertiary qualifications and at least three years experience
- **Maintenance Engineer**: Four year degree and at least five years experience
- **Research & Development Engineer**: Four year degree and ten years experience

At this salary level the equivalent position in the private sector is Design Engineer with a fixed salary range of $53,091, $58,520, $66,960 (Q1, median, Q3). Again this position has significantly less responsibility and accountability than the equivalent academic position.

Design Engineer
Position reports to:
Senior Engineer or Project Engineer
Primary objective:
Conduct engineering design assignments within clearly defined parameters and standards under general direction.
Specific accountabilities:
- Prepare plans, layouts and designs with supporting calculations for specifications. Supply drafting and estimating staff with information to assist in the production of detailed drawings, the development of tools, quantities, materials lists and cost estimates as required.
- Check plans, designs, materials purchased and equipment for conformity with specifications.
- Assist in the preparation of technical detail for sales inquiries, quotations, contract documentation, technical literature or in the analysis of failures following customer complaints.
- Liaise with research and development engineers regarding development work or construction and production engineers regarding manufacture of designed products or planned structures.
- Liaise with suppliers, clients, consultants or commissioning engineers concerning the design, installation, construction and commissioning of assigned work.
• Participate in the planning of projects as required.

Matching indicators:
Tertiary qualifications and more than five years experience. Incumbents receive regular but not detailed supervision.

Position is one level above that of a graduate engineer entering the profession. Equivalent to APESMA Level 2.

Research and Development Engineers in the private sector are paid in the salary range $58,373, $64,322, $68,688 (Q1, median, Q3).

Research and Development Engineer
Position reports to:
Experienced Engineer or Project Engineer

Primary objective:
Carry out engineering assignments within clearly defined parameters and standards under general direction, which may involve research, product development, laboratory testing, design, installation, commissioning of equipment, maintenance or construction.

Specific accountabilities:
• Participate in the planning of research projects and assist in the solution of research problems by modifying and adapting established procedures.
• Devise research methods and set up laboratory test equipment, rigs, models, prototype designs and instrumentation.
• Conduct investigations and tests as required. Calculate and analyse test results and prepare detailed reports with recommendations and conclusions.
• Conduct feasibility studies and develop theoretical models within which assignments are conducted and prototype designs are tested. Provide supporting calculations and specifications necessary for the development of pilot plants and the assembly of prototype designs.
• Prepare detailed evaluation reports, cost estimates and recommendations on the specification and design of new or improved products, components, plant, equipment, systems or apparatus as required.

Matching indicators:
Four year degree and minimum 10 years experience. Equivalent APESMA Level 2.

What this comparison shows is that at the equivalent salary in a university a research engineer at lecturer or senior lecturer salary level will also teach, supervise a number of postgraduate students and regularly publish.

Associate Professor ($79,000-$88,000)
At this salary level engineering positions in the private sector identified by Mercer typically require a four year degree and more than ten years relevant experience.

The private sector position matching indicators for positions with a median salary clearly within the academic salary range $79,000-$88,000 are:
• Experienced Design Engineer- Tertiary qualifications and more than ten years' experience.
• Experienced Industrial Engineer- Four year degree plus a minimum ten years' relevant experience

At the salary level of associate professor, an experienced design engineer in the private sector works in accordance with set objectives and is allowed considerable professional autonomy. Project direction is often decided in regular conferences with a Senior Engineer, as well they may supervise young graduate engineers, technicians and technical specialists.

Professor ($101,000-$102,000)
At this salary level Engineering positions in the private sector identified by Mercer typically require tertiary qualifications and specialised experience.

The private sector matching indicators for positions with a median salary clearly within the academic salary range $101,000-$102,000 are:
• Experienced Project Engineer- Tertiary qualifications and at least five years project engineering experience
• Experienced Plant Engineer- significant experience in complex engineering assignments
• Senior Project Manager (Development)- Four year degree and minimum ten years experience in construction project management.

At the salary level of professor + ($101,000-$102,000) Engineering positions in the private sector identified by Mercer typically require significant professional engineering experience.

The private sector matching indicators for positions with a median salary clearly within the academic salary range $100,000-$250,000 are:
• Principal Engineering Executive- Ten to fifteen years' engineering experience, with an engineering division of at least 12 professional staff
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- **Chief Engineer**: Four year degree with a minimum ten years engineering experience.

  The position of Principal Engineering Executive attracts a salary in the private sector in the range $140,676, 171,108, $215,239 (Q1, median, Q3)

**Principal Engineering Executive**

Position reports to:
Chief Executive

Primary objective:
Plan, direct and control the engineering activities of the organisation to ensure operations achieve quality and production objectives.

Specific accountabilities:
- Direct and control the engineering and technical operations of the organisation in consultation with other managers and professionals to ensure that standards of quality, cost, safety and performance are observed and that time schedules are met.
- Plan engineering methods, policies and procedures.
- Liaise with senior manufacturing and research executives in the design and implementation of operating standards to achieve production plans and business objectives.
- Define and review plant maintenance policy to optimise efficiency and quality.
- Liaise with quality control staff to set quality standards for the efficient functioning of plant and equipment.
- Coordinate the activities of the engineering function and encourage the exchange of information, ideas and techniques in the various engineering fields.
- Direct the regular review of plant and equipment to ensure it meets production and quality requirements and report on other options available to achieve objectives.
- Participate in research and development projects as required.
- Direct the conduct of major building extensions or additions, including liaising with architects, engineers, councils and statutory authorities to achieve plans within budgets and time frames.
- Assist other executives in controlling costs and quality of production processes, warehousing and distribution of finished products and raw materials.
- Prepare and maintain budgets and schedules on projects within the engineering division.
- Coordinate the activities of engineering staff and control staff selection and training.
- Ensure activities related to the function comply with relevant Acts, legal demands and ethical standards.

  Matching indicators:

  Typically, incumbents would have 10 to 15 years' engineering experience, with an engineering division of at least 12 professional staff.

  The position of Chief Engineer in the private sector attracts a salary of $104,714, $119,133, $133,268 (Q1, median, Q3).

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**Chief Engineer**

Position reports to:
Principal Engineering, Manufacturing Executive or Plant Manager

Primary objective:
Direct and coordinate the efficient operation of the engineering plant and functions in accordance with production schedules and company policy.

Specific accountabilities:
- Direct the work of professional engineers in accordance with quality standards, policy and priorities and within budgeted costs.
- Exercise indirect supervision over foremen with respect to production volume and cost and quality of production in meeting production schedules and delivery dates.
- Provide leadership and guidance to engineering staff to maintain quality, efficiency and productivity of the production operation.
- Participate in determining operating plans, budgets and capital additions for the production operation to ensure maintenance and engineering quality controls are achieved.
- Ensure all engineering staff comply with policies, safety standards and good housekeeping practices.
- Participate with the Plant Manager in the forecast and establishment of workforce requirements, work schedules, equipment layout, production methods and material handling procedures.
- Ensure all areas of the plant operate efficiently and that maintenance schedules are followed.
- Prepare regular reports as required.
- Maintain records of all production maintenance activities and costs for review with the Plant Manager.
- Establish controls for the achievement of production efficiency, optimising yield and product quality.
• Participate in projects associated with site expansion, plant extension, increased or altered storage and warehousing facilities, under the direction of the Plant Manager.

• Participate in meetings relating to planning, production, quality, safety and other operational matters as determined by the Plant Manager and set up work control systems to ensure that standards are met.

• Direct and develop subordinate staff and refer all employee relations matters needing attention to the Plant Manager for review.

• May oversee spot quality control checks to ensure in-process operations accord with established standards.

• Ensure activities comply with relevant Acts, legal demands and ethical standards.

Matching indicators:
Typically, incumbents would have a four year degree with a minimum 10 years engineering experience.

Clearly in the engineering profession, salary pressure is the greatest at the top and bottom of the academic scale. Private sector positions equivalent to associate lecturer level require significantly less professional expertise and qualifications. At the top of the salary scale it is not unusual for an engineer in the private sector to be paid well in excess of professorial level.

At the lecturer/ senior lecturer level comparisons are not as clear as a number of jobs in the private sector in this mid salary range will have the same position description. Here the salary range depends upon the size of the organization and resources. For example in the private sector an experienced industrial engineer is paid in the salary range $73,236, $84,457, $105,985 (Q1, median, Q3). So far the discussion has focussed on the science and engineering job.

Finance and Administration Positions
An analysis of the benchmarked positions in Finance and Administration shown in Table 6.3 reveals that:

• There are nine private sector positions clearly attracting salaries in the private sector greater than a professorial salary. Each of these positions have significant management responsibilities.

• There are 11 private sector positions attracting salaries in the private sector similar to that of a professorial salary; however, a number of these positions also appear at a lower salary because private sector salaries are often determined by the size and complexity of the organisation.

• There are 11 private sector positions attracting salaries in the private sector similar to that of lecturers and senior lecturers. For these private sector positions identified in this academic scale the salary range extends across the senior lecturer and lecturer academic scales.

• There are 12 private sector positions attracting salaries in the private sector similar to that of associate lecturers. A number of these positions require limited professional qualifications in finance and business.

A similar analysis has been conducted for Finance and Administration and the Human Resource job family. The patterns identified in the analysis correlates highly with those in IT, Engineering and Science.

Validating Job Positions and Data Analysis
The validation process was undertaken at one of the universities involved in the response study. It involved the following steps:

1. The Mercer academic and private salary data from the employment families were circulated and explained to the deans of the relevant faculties

2. Job descriptions from the positions included in the salary scale data were separated from the salary scales and circulated to the deans

3. Two members of the team interviewed each dean.

The idea of the validation process was to discuss the data and confirm or disprove conclusions drawn from them in the analysis of each of the disciplines framework represented by the job family.

Validation 1 Information Technology
The Mercer benchmarking data and the conclusions drawn from it were discussed with past and present deans of an information technology faculty to validate the job descriptions and outline responses to the Benchmarking data contained in the Mercer research. The interview took approximately one hour, notes were taken by the two project participants and compared post interview.

Job Descriptions
The private sector information technology position descriptions were compared to university academic roles by the deans. A number of positions of similar role and employment were identified. For example, the private sector job description, information training manager, was seen as having some comparability with that of senior lecturer in IT, however, in addition to the roles identified in the private sector training
manager description senior lecturers also undertook research and would be more likely to be responsible for delivering the disciplinary content than the private sector role description.

A conclusion may be drawn that senior lecturers are required to have significantly greater breadth of skills and knowledge than that required in the private sector in this comparable position and earn less of equivalent remuneration. On the other hand, a private sector employee in this position would most probably have more responsibility for the selection, training and management of staff in the training division of the company.

In the IT sector generally many of the position descriptions are not directly comparable, due to the special nature of currency of knowledge as a factor in the demand for labour; for example in comparing positions such as system analysts, up to date industry knowledge is a necessary requirement. Furthermore this knowledge is highly specialized and could be too narrow for academic appointment. Thus there is a less direct equivalence of position because of the role of sub sets of disciplinary knowledge; however, academic roles often have such knowledge as the basis of employment, as well as research and publication.

**IT employment and the IT academic labour market**

The deans made a number of points reflecting the Mercer research, about the academic labour market and the IT industry.

To retain and attract staff, loadings have been provided at all levels of employment ranging between five and 40 per cent. These loadings have been funded from the earnings of the faculty from its private sources of income. This method is adopted to deal with declining academic salary relativities.

The most critical point for employment lies at the bottom end of the salary scale – at the level of associate and lower lecturer scales. Comments by deans confirm the Mercer research, which shows why at the lower levels and salaries, academic salary relativities have declined to such an extent that salary must be supplemented to attract any staff at this level. Even with loadings it is proving difficult to attract and retain the best quality post graduate students, as they leave for higher salaries and better job prospects in the private sector.

Surprisingly, at the other end of the salary scale, it is easier to attract and retain staff because the university is not competing as directly with the private sector. In the view of the deans, the university staff at these higher levels are not as attractive to the private sector because they lack current industry experience and their higher qualifications do not offset their often out dated and narrower range of knowledge and lesser management skills.

The policy of this university not to offer academic positions to any applicants without formal post graduate qualifications. In their view this will narrow the potential range of applicants in the future and in particular was going to make the issue of attracting young postgraduates even more critical. They were concerned that the faculty was losing the capacity to reproduce itself, as its best graduates were increasingly being attracted to the private sector at far higher salary levels than that available in the university sector.

Overall, IT academic employment and salary pressures are counter cyclical to the state of the IT industry in the private sector. At the moment, salary and employment pressures in universities have eased due to the current downturn in the private sector. They can be expected to return to past pressure levels as the industry recovers.

**Validation 2 Science**

The Mercer benchmarking data was discussed with a dean of science to validate the job descriptions and outline responses to the benchmarking salary data contained in the mercer research. The interview took approximately one hour and notes were taken by the two project participants and compared post interview.

Initially, the science position descriptions in the private sector were compared with university academic roles by the dean. It was suggested that there was a close correlation between the private sector positions (reflected by their job descriptions) and the tasks and roles undertaken by university science and engineering academics.

In both cases, the majority of positions required employees to apply scientific knowledge and skills. For example the position of Chief Chemist in the private sector would require similar background (research degree in science) and involve similar scientific knowledge skills comparable to professors and associate professors in academic positions. As a result there was significant science labour mobility between the private sector and academic sector – and in some sense there was a scientific labour market that included academic and private sector supply and demand.

Where differences in the private sector and academic job descriptions were identified they reflected the role of management responsibility (where private sector employment descriptions incorporate greater management and breadth of management roles) and research (where academics had requirements to research and publish). New roles in the management and commercialisation of research are now required in some senior academic positions.
CHAPTER 5 Academic Salary Relativity Research

Given that job descriptions are similar in both academic and private scientific employment, academic salaries are uncompetitive at all levels, with the most severe repercussions and consequences at the level of associate lecturer. Associate lecturer salary scales are so uncompetitive that academic employees would earn less than their graduates.

Since the science faculty is unable to earn external income in the way that information technology are able to, there is no salary supplementation to increase associate lecturers’ salaries to compete with private sector salaries.

This has a number of consequences; advertisements for associate lecturer positions attract few if any applicants; in the past when associate lecturer positions were filled (associate lecturers must have earned a PhD) they were promoted to lecturer and above within two years; the faculty has the majority of its staff at senior lecturer or above level, causing severe budgetary and staffing flexibility problems for the faculty.

An even more serious implication is that the best and brightest honours students and post graduate research students do not enter academia as associate lecturers – they enter the private sector as employees and within two or three years command salaries sometimes at the associate professor or professor level.

At the higher levels of academic positions, the low salary levels are influencing recruitment at the professorial level. Professorial employment advertisements no longer attract significant high skilled international applicants.

The Dean in reflecting on three recent appointments at this level, revealed that no candidates were attracted from the USA or Canada. Two professorial positions were offered to highly qualified UK candidates but after inspecting facilities and reviewing remuneration and living costs both applicants refused appointment on the grounds of low salary. As a result, two other candidates were appointed, one local and one from overseas who took the other position cited lifestyle reasons for taking the position. He also enjoyed salary supplementation through existing commercial arrangements which he was allowed to maintain.

**Validation 3 Engineering**

The engineering positions described by Mercer were examined for their relationship to the corresponding academic salary levels and duties. While there were parallels between the various levels, it was pointed out that there were barriers to movements between academia and the private sector.

A key difference between academic and private sector employment is the now almost universal requirement in academia for staff to have a PhD and depending on the level of the position, significant research experience; consequently, though the faculty continues to have strong links with industry, it is now not as easy as it once was for staff to move from a full-time position in industry into the faculty.

To balance this is the interest among employed graduates in seeking to complete a professional doctorate, which they see not as a stepping-stone to academic employment but as help in gaining promotion within the private sector. This explains the popularity of the management stream within the doctorate.

Despite the differences in the actual work being carried out in the two sectors because of the strong presence of consultants in industry, it is possible for some academic staff to take on very substantial consulting roles, that if they were members of outside consulting firms would lead to their earning $300,000 plus.

There are senior members of the faculty who have made deliberate choices to stay with their academic positions, though these are poorly paid by comparison with what they are capable of earning in industry, because they find the academic life more attractive and some of the benefits quite competitive with the private sector. To a significant extent they are able to supplement their university salaries through part-time consulting and thus reduce the salary disadvantage of an academic position.

It would be incorrect to say that all members of the academic staff would find ready employment in industry and if they did that they would earn more than they do at present. Nor could it be said that people in high paid positions in the private sector would be able to move into academe at that level. They are two different, but on occasion overlapping worlds.

The faculty recently advertised positions at the professorial level. There were no serious candidates from outside the country. Applications were received from academics across the country, including Sydney. The cost of living in Sydney, however, was not a sufficient issue to discourage applications from elsewhere in the country.

It was of interest that engineering, which had seemed to be on a downward spiral in student interest, was now picking up more applicants. This increase in interest reflects the growth of job opportunities in engineering and probably reflects some loss of attraction to IT positions.

**Validation 4 Finance and Business**

The finance and administration positions described by Mercer were examined for their relationship to the corresponding academic salaries and duties. While there are parallels between the positions, the university had experienced mixed success when employing
CHAPTER 5 Academic Salary Relativity Research

academic staff from the private sector. This is particularly true where the person did not have a PhD or a research background.

After a period of time their industry experiences become less relevant and their war stories are no longer current. Without a research background they are unable to successfully make the transition long term.

The strongest competition for academic staff in finance and business faculties comes from other universities rather than the private sector. It is not uncommon for universities in Sydney and Melbourne to recruit their academic staff from other universities within the same city. As a result it has been necessary to provide attraction loadings at all levels of employment. The university offers in addition a performance based salary supplementation scheme of up to 40 per cent of current salary. These salary loadings and Supplementation are funded from faculty earnings.

At the bottom end of the academic salary scale, particularly in the accounting school, the university is unable to recruit staff at the associate lecturer level. Most positions are offered at a minimum level B. Despite this many post graduate students still leave for the higher salaries and better job prospects in the private sector.

The Faculty is concerned about the issue of attracting young postgraduates and is exploring ways of increasing the diminishing pool of honours students. From this they would hope to generate their next generation of academic staff and at the same time address the issue of their aging workforce.

At the other end of the salary scale, the university is not competing directly with the private sector. Their concern, particularly in the Finance and Economics School, is poaching by other universities. Offers include higher salaries, lower teaching loads as well as research status and staff.

Overall, finance and business faculties are experiencing significant salary pressure. To an extent they are able to address this by offering salary supplementation from faculty earnings. At the moment universities are relying on casual staff to meet staffing pressures including the 40 per cent increase in applications for full fee paying courses.

International Benchmarking

Having identified the benchmark roles in Australia, the project team then determined for the USA and Canada the salary bands to which these benchmark roles aligned. The results are reported in US and Canadian dollars respectively. So that the results are not skewed or misinterpreted by wrongly applying currency exchange rates. The comparisons in the US and Canada were made against base salary, defined as annual salary excluding any other additional payments. Sometimes it is simply referred to as ‘salary’.

The project team aligned the Canadian and US private sector positions to the relevant US or Canadian academic salary range in the four professional job families identified: information technology, engineering and science, finance and administration and human resources, Table 6.6. The project team did not collect private sector salary data for salaries above US$100,000 and Cdn$100,000.

Canadian academic salary figures are based on the University of Calgary maximum salaries as at June 30, 2002.

### Academic Rank | Salary/$Cdn
---|---
Professor | 125,00
Associate Professor | 83,000
Assistant Professor | 73,000
Lecturer | 53,714

United States salary figures are based on average academic salaries for all doctoral institutions 2001-2002.

### Academic Rank | Salary/$US
---|---
Professor | 94,788
Associate Professor | 64,953
Assistant Professor | 55,404
Lecturer | 44,025
Instructor | 37,959

The tables clearly show that recruiting staff from Canada and the United States to Australia in both the public and private sector is difficult if the only incentive is salary. Given the current exchange rate, Australian universities are not in a strong position.

In the information technology profession, entry-level salaries are similarly aligned to the entry level academic salaries in all three countries. Three private sector jobs commonly occur across the lowest academic salary scale in Australia, Canada and the United States. They are helpdesk officer, computer operator and data control supervisor.

In the finance and administration profession entry-level salaries for graduate accountants align with the entry level academic salaries in all three countries. Differences become more apparent at the mid to higher levels of academic salaries. Private sector salaries for senior private sector positions tend to be at a higher level on the academic salary scale in both Canada and the United States than in Australia.

In the Engineering and Science professions, entry-level salaries for graduates entering the private sector in Australia are relatively lower than in the United States and Canada. Typically a graduate engineer is paid at the lowest academic salary scale in Australia while in
the US and Canada graduates with one to three years experience are paid in a higher equivalent academic salary band.

In the human resources profession the patterns of private sector jobs across the academic salary bands in each country show a number of consistent patterns including similarities in traditional occupations such as an industrial nurse.

Conclusions

The benchmarking approach taken in this chapter represents a novel approach to analysing academic and private sector salary relativities, going beyond the narrow fixed position comparators. A benchmarking of academic salaries across the entire range of private sector salaries and positions with four job families that compare with university academic employment, reveals significant data.

This research confirms the patterns and trends identified in the interviews with university management; namely, that academic salaries are in general uncompetitive at the lowest and highest levels with private sector salaries, leading to significant changes in the operation of the academic labour market; furthermore, to fully understand the academic labour market operating within the major disciplines a validation study sought to analyse the downstream variables by using the Mercer data and analyse the results through discussion with the five faculties.

The validation reveals the complexity of the disciplinary academic labour markets. University salary relativities have caused changes in the way the disciplinary markets operate because asymmetry has freed the employers to develop a sophisticated range of human resource practices and remunerate systems. These flexible arrangements exist outside the EBAs.
Chapter 6

Case and Inquiry Based Teacher Education
CHAPTER 6

Case and Inquiry Based Teacher Education

6.1 The Publications


These publications comprise two papers published in refereed journals and one refereed conference paper. The first refereed article presents a synthesis and overview of research on a case-based teacher education program - the Master of Teaching offered in the Faculty of Education at the University of Sydney. It appeared in a special themed issue of the journal *Change: Transformations in Education* in 2003, which was devoted to research on innovations in teacher education. The second refereed article is one of the few research-based analyses of how student teachers learn from cases. Using a cohort of 40 students in a case-based teacher education program, the research explored the link between student learning from case-based inquiry and how cases are introduced and structured for teaching and
learning contexts in teacher education. In particular the research analysed the mechanisms of learning and how student teachers' understanding of teaching cases expanded, extended and transformed as they went from individual to small group to large group analyses of the case chosen for the research.

The research presented in the refereed conference paper compared inquiry-based approaches in medical and teacher education. The paper was presented to a large audience of teacher and medical educators at the 1997 National Australian Curriculum Studies conference and focussed on an inquiry-based education models of problem based and case based education in the two disciplines of medicine and teaching.

### 6.2 Research Purpose

According to Sachs (2003), inquiry stands at the centre of all activities in developing an activist teacher. Zeichner (1991) argues that teaching is itself a form of inquiry. Developing skills in inquiry into their own and others' practices is vital in producing activist professionals. However, structuring and preparing inquiry-based courses requires knowledge of

- how student teachers can learn from inquiry and
- how they respond to real-life teaching situations presented in the form of cases or problems.

The purpose of this research was to investigate how and what student teachers learn from cases. It also investigated the links between the structure of case-based materials and student learning when the materials were used in different ways.
6.3 Research Methodology

Case analysis uses research methodologies based on student reflection. The research presented in the portfolio examined how students learned from teacher written cases. It also explored student learning in individual, small group and whole class contexts. Adapting a research methodology pioneered by Morine-Derschimer (1996), data was collected on students' reactions to cases, who they identified with in the cases, and how they thought they themselves might act in the case context. Data were collected at three different stages: after students had the opportunity to respond to the case individually; after they had the opportunity to share their ideas in small groups; and after plenary discussion with the whole class. Because of its design the methodology also allowed the researchers to measure the impacts of the community of learners on the ways that students learned from cases.

6.4 Co-authorship

The refereed journal papers were jointly conceptualised and collectively written by the authors (Ewing, Smith, Horsley and Forster and Horsley), all of whom had taught community of practice groups in the Master of Teaching program. The research methodology and data were jointly constructed, collected and analysed.

The refereed conference paper was also jointly conceptualised, researched and written by the three authors. My main focus in the publications was to conceptualise the research methodology and develop protocols for the collection and analysis of the research data. This research was disseminated at staff colloquia within the Faculty of Education at the University of Sydney and motivated and encouraged a number of higher degree students to develop research on learning through case-based and inquiry approaches in teacher education.
6.5 Recognition of the Research

The research has been groundbreaking in linking Education and Medicine, and it has been vital in the ongoing development of case-based inquiry in both Teacher and Medical education. The research has also been used in professional development of staff in the Master of Teaching program. This professional development has proved an invaluable support for new staff preparing to teach in inquiry-based courses for the first time and also for experienced staff who have been given the opportunity to explore new delivery modes for community of practice groups in the Master of Teaching program. The research results and findings have been useful in the development of new cases developed to support teacher education learning.

The implications of the research for structuring cases and introducing them to the students represents evidence-based research. The main finding of the research has been that prior-learning determines what student teachers see in cases. These findings have been used to structure case-based episodes to provide an opportunity for students to refine and share their responses to situations in the cases being considered. The findings have also assisted community of practice group facilitators as they encourage students to share their ideas more as they have experienced inquiry in practice. In learning-centred programs it is important that facilitators understand fully that students often interpret cases and situations in teaching in ways that are diametrically opposed to the reasons for which the cases were written. These findings, reported in the research included in the portfolio, have also influenced the ways that cases were presented to student teachers and the ways that case-learning sequences were structured to maximise student learning.
PAPER 1

An Inquiry, Case Based Approach to Teacher Education:

Findings and Implications

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Inquiry and case based approaches to professional education have been popular in Australian universities during the last decade. These approaches use cases, issues and/or problems derived from everyday practice as a basis for learning about a profession within a context of the learners taking a major responsibility for decisions about their own learning.

This article uses the experiences of the Master of Teaching (M.Teach) degree at the University of Sydney in Australia to consider the advantages and limitations of inquiry and cases as the foundation for pre service teacher education. It draws on evaluation and case study data to reflect on the use of cases to prepare teachers to work in a post-industrial context.

INTRODUCTION

The last decade has seen the development of a range of professional education courses that have used inquiry and case/problem/issue based approaches to underpin pre-service preparation. Inquiry and case based methodology is one approach to teaching and learning which seeks to place the learner at the centre of their own learning. Teacher education has been no exception. This article seeks to explore the benefits of using an inquiry and case based approach in a pre-service teacher education degree: the Master of Teaching (M.Teach) degree at the University of Sydney, introduced in 1996. It briefly explains case based methodology within the more general umbrella of inquiry based learning before examining a range of data collected from students about the value of using cases when learning to teach.
CHAPTER 6 Case and Inquiry Based Teacher Education

PRINCIPLES UNDERPINNING A CASE BASED APPROACH

Problem, case or issue approaches centre on the learner. The expectation is that rather than equipping learners with a store of knowledge and skills about their profession, they will be assisted towards mastery of a range of competencies. It is anticipated that these competencies will be important throughout their professional journey and will equip them to continue to learn and cope with accelerating change in all aspects of their professional and personal life.

Some have argued that the use of an inquiry, case based approach is the most important recent innovation in education for the professions (e.g. Boud & Feletti 1991). At the University of Sydney, for example, a range of professional courses including medicine, social work, education, architecture and engineering have begun to use variations of this approach to prepare their students for their professional journeys. Whether problems, cases or issues are used as a starting point, the approaches aim to ground the knowledge and practices of a profession in authentic workplace experiences. Students are confronted with problems or issues from practice. Based on a constructivist approach to learning, the idea is that the learner will analyse the issues drawing on their own lived experiences along with recent theory and current practice to create new meanings and understandings (Bacon & Bloom 1995).

In the area of teacher education, Shulman (1986, 1992) has proposed that four principles are characteristic of all case or problem based approaches. Each principle is explained briefly below:

1. Students are expected to take an **active role** in their own learning. They are charged with formulating relevant questions to explore. One of the most important tenets of constructivism (Vygotsky 1978) is that learners will learn most effectively when the experiences are connected to their experiences and when they feel passionate and involved in what they are learning.

2. Social interchange and relationships are crucial in the development of knowledge and knowing about something (Heshusius 1989). **Cooperative or collaborative practices** will enable students to support each other. At the same time this caring, supportive context will enable the challenging of each other’s ideas and beliefs.

3. **Reflection** about what, how and why students are learning using this approach is mandatory. The learner focuses both inwardly on their own beliefs and practice and externally on the context in which the practice is situated. Sykes and Bird (in Bacon & Bloom 1995, p. 287) claim that:

   The case idea ...helps to balance the stance of the actor in the situation with the stance of the observer on the scene, provides means to represent situational complexity, provides a form for grappling with the interaction of possibilities for action....
4. Closely related to the second principle, outlined above, students will be nurtured within a community of learners in their professional field. Learning with the support of others who are on a similar journey will be more productive than undertaking the journey alone. Each learner will contribute to the learning of others. Palmer (1998, p. 103) writes about a communal dynamic which brings focus and discipline to a sharing of observations and interpretations which stretches each learner. Further, he asserts that:

this community can do much to rescue us from ignorance, bias and self deception, if we are willing to submit our assumptions, our observations, our theories – indeed ourselves – to its scrutiny (p.104).

The interactive engagement of all four principles is essential to any effective case based inquiry.

**WHY CASES IN TEACHER EDUCATION?**

In the past, criticism of teacher education in Australia has claimed that the theoretical study of the processes of teaching and learning at the tertiary institution does not adequately prepare prospective teachers for the reality of classroom and school situations (e.g. Ramsey 2000; NBEET 1995). This is often linked to the suggestion that pre-service education has not confronted prospective teachers with their own, often unarticulated and unchallenged, beliefs about teaching and learning based on their lived experiences in schools and other learning contexts (Morine-Dershimer 1996).

An inquiry case based approach in teacher education has been strongly advocated for a number of reasons. One of the most important is the potential for the development of critical analysis and problem solving in specific contexts (Shulman 1986). Complex, multidimensional situations can allow a range of different perspectives to be considered in formulating a plan of action. Collaborative learning structures support such diversity. Learners must actively investigate their own beliefs about teaching and learning through an exploration of the case or problem. They bring their own prior knowledges, understandings and experiences to this investigation.

**CASES WITHIN THE MASTER OF TEACHING, UNIVERSITY OF SYDNEY**

The M.Teach program at the University of Sydney attempts to orient student teachers to become education change agents equipped to help young learners prepare for the demands of the 21st century (M.Teach program handbooks 2002). It also focuses on facilitating student teachers’ own learning, and an understanding of learning as a basis for changing classroom practices. The following brief overview focuses primarily on the use of cases in the degree.

The M. Teach degree incorporates the four principles outlined above in its underlying philosophy, course structure and teaching practices. First offered in 1996, the degree currently has about two hundred and fifty primary and secondary preservice
teachers enrolled in both years of the degree with an average age of thirty years. A significant number of students have made a conscious decision to change from their previous career path to become teachers.

The degree uses an interdisciplinary inquiry based approach arising from the presentation of a range of different kinds of cases over two years of study. The use of cases is developmental and moves from initial case analysis to case authoring. Many of the cases employed, have been written by experienced teachers. The cases provide the main framework for the entire course, rather than just one segment as has been the practice in other programs using this kind of approach (e.g. Morine-Dershimer 1996).

Course components across teaching subjects are built around two major “studies”. In Study 1 student teachers are grouped with candidates for both primary and secondary schools working together. Staff are also teamed so that student teachers work with two members of staff. The Study 1 themes are Students, Teachers, Knowledge and the Curriculum, and Schools and Communities. Study 2 focuses on the particular curriculum area(s) the student teacher will teach, or in the case of primary candidates, the six Key Learning Areas mandated for children from years K to Year Six in NSW.

A major assumption of the program that is made explicit in its organisation and practices is that even in the two year degree it is not possible to provide everything that a beginning teacher needs to know to begin their journey. This assumption is reflected in the reduction in previous face-to-face teaching time and a concomitant emphasis upon student directed learning, individual, including web-based interactions, and in small groups.

In addition, the use of a case based framework implies that every student teacher’s experience in the course will be unique. In each phase of the program student teachers are encouraged to adopt a socially critical and reflective approach to the profession. Questions of equity and the effects of various pedagogies are examined with respect to the interrelated phenomena of class, gender, race, culture, ethnicity and disability. Student teachers are introduced to a variety of modes of teaching and learning, both within sessions at university (including the use of video) and through the direct observation of school and non-school contexts. They build on these experiences to develop their own teaching styles and rationales for teaching practice within a context of the examination of their own experiences of schooling, using a variety of individual and collective strategies. The use of a wide range of information and instructional technology are also features of the program. Assessment is ungraded and criterion based with peer assessment being an important component. Student teachers are expected to keep a journal of their learning and professional development during the two years. This forms part of their portfolio.

As already mentioned, the use of the cases has been conceptualised in different ways at different stages of the course. In Phase 1 which runs for the first eight weeks of the program, questions are organised around four ‘triggers’: Communicating, Knowing, Curriculum and the Social Context of Education. Student teachers, individually and in each Study 1 group, frame their questions after engagement with a variety of stimuli (e.g.,
staff presentations, videos, collaborative activities and print material). They investigate these questions during their school visits. An Information Technology course also supports students at this initial stage. Assessment is non-graded and centres around a mediated written reflection based on earlier journal entries. The reflection is written within a context of peer feedback.

During Phase 1 there is a strong emphasis upon the use of activities to promote team building and effective group processes. Cooperative learning is an important underlying philosophy of the M.Teach and much of the modelling and basis for this occurs during Phase 1. Faculty members have been paired in Study 1 groups as facilitators. Where possible, staff work with someone from a totally different background. An educational psychologist with secondary teaching experience, for example, may work with a former primary teacher who is an English curriculum specialist. More traditional ‘expert knower’ - ‘neophyte teacher’ seminar relationships are discouraged. Staff members are encouraged to see themselves as co-learners alongside their student group members. Teacher education staff involved in the M.Teach who were more used to traditional pedagogy have been challenged to reflect on their own approach to teaching and learning, and, in a number of cases, have changed their practices. An ongoing professional development program for staff, begun two years prior to the implementation of the M.Teach has been an important catalyst for this.

One of the challenges, as the course has expanded, and more staff members have become involved in teaching the course, has been to continue this dialogue and professional learning. Increased enrolment has also been accompanied by resource and staff cuts and pressure to return to mass lectures and less seminars, within a national political ideology of increasing economic rationalism (Smith & Lovat 2003). Seminar groups have grown from eighteen to an average of twenty six. While not ideal for effective inquiry learning, this size is preferable to larger lectures.

In Phase II, student teachers are introduced to more detailed case material written by classroom teachers. These reflect the teachers’ own concerns and issues within their school contexts. Contributors have taught in a range of Sydney and rural schools across the K-12 spectrum. They included executive staff and beginning teachers. Student teachers, both individually and in small groups, spend time analysing these cases, researching relevant policy documents and related articles and resources and formulating a response or plan of action. The results of their research and analysis are shared with other students in their relevant Study 1 group. In Study 2 students work in their curriculum areas and in many of these a case based approach has also been used to explore the pedagogy in a particular discipline area.

After student teachers complete their first practicum in Phase III of the M.Teach, they are involved in authoring their own cases to explore their first professional experience and to confront their own personal beliefs and practices and to encourage critical reflection. Again, while each case authoring is individual, there are a variety of group processes to support individual work. These cases are shared in seminar groups. During
Phase 4, at the beginning of the second year of the program, students undertake a small collaborative research project to investigate an area they have identified as important in the relationship between the school and the community. Study 2 continues with subject specific curriculum work.

After the second practicum in May of the second year of the course, successful candidates are deemed to have completed their initial teaching qualification (Bachelor of Teaching). This accredits them to teach in NSW schools. While some 10-20 teachers leave the course at this point, the vast majority undertake a ten week internship in a school of their choice, as Associate Teachers. To date, while the majority of internships occur in Sydney based schools a number of internships have been completed interstate and in countries overseas. During the ten week internship, Associate Teachers teach about two thirds of a full load. In addition, students undertake an action research project or final case study to examine an aspect of their teaching. The project is negotiated with the individual school. Following the internship there is a Post-Internship Conference in which Associate Teachers present their action research in poster form to faculty staff and their colleagues.

The next section examines a range of data collected from M.Teach students concerning the efficacy of the use of cases in teacher education.

**RESEARCH ON CASE ANALYSIS**

Forster and Horsley (1997) used Morine Dershimer’s (1996) methodology to research two student groups’ responses to a case analysis in the first cohort of M.Teach students. They found that the case did provide inherent motivation for the preservice teachers to think through their own initial perceptions. Tracking individual responses to a case through to small group and large group responses to a series of questions, Forster and Horsley found that much learning occurred through participation in collaborative discussion. In addition, individual, small group and large group discussion were very different. While individual responses to the case tended to be dominated by empathy and prior learning, small group discussion manifested more generative learning. Whole group talk focused on teachers’ professional roles and responsibilities as possible plans of action were explored. Use of cases was successful in achieving the anticipated outcomes of reflection and transformation. In their words:

Through reflection on an unresolved narrative - based case, preservice teachers came to an understanding of their own beliefs and attitudes. Thus they came to make sense of their learning, defining and solving their practical problems (p.63).

Coding of the students’ responses revealed a range of metacognitive comments: students realised what they did not know and this led to their structuring of their own participation forward. This response coincided with Ackerman et al (1993) ’s comments: “At some point, participants begin to think differently - more critically and less self-centredly. They are challenged and inspired to think more deeply about their practice” (p.23).
In addition, from Forster and Horsley’s (1997) study it can be seen that the role of the seminar leader is extremely important. Seminar questions need to acknowledge that the role of prior learning and experience. They need to require students to move beyond feelings to consider action plans and resolutions that are professionally possible. As Cranton indicates (1994, p.14):

Transformative learning occurs when through critical self-reflection, an individual revises old or develops new assumptions, beliefs or ways of seeing the world.

Several years later, Col Bishop’s (2001) doctoral study on the experience of six M.Teach students’ use of cases concluded that the use of an inquiry, case based approach can be a powerfully effective basis for professional learning. At the same time, however, his study provided some important caveats to the analysis of cases in Phase 2 of the program:

(i) The use of cases must be carefully structured, sequenced and scaffolded.
Strategies to encourage all students to engage with a range of cases rather than only concentrate on the one chosen for in-depth analysis is essential to maximising student learning. Careful planning, peer review and accountability checks produce better quality case analyses and case stories and more powerful and insightful learning;

(ii) Students must be provided with a clear rationale for this kind of approach;

(iii) Some students expected a ‘recipe’ for effective teaching and were initially frustrated by the collaborative process;

(iv) Several students displayed a tendency to choose a case for analysis and themes for case authoring that reinforced their own prejudices or existing stereotypes.

(v) Many of the original case stories also focused on extreme incidents, interactions or particularly difficult students rather than the everydayness of teaching and learning.

The findings from Bishop’s study were incorporated into the M.Teach Study 1 Framework.

**CASE AUTHORING**

The concerns raised in the case stories written after the first practicum reflect the concerns of many beginning teachers. For example, many of the case stories focus on issues related to classroom management, juggling the many roles of the teacher, coping with individual differences and with the cultures of schools and classrooms. These are common themes that have often been reported in the literature (e.g. Ramsey 2000; Ewing & Smith 2002).

The kind of reflective writing which has developed through this case authoring indicates an understanding of the complexities of the roles of teachers and demands both within and outside the classroom. Anne, for example, talks about her first practicum as
CHAPTER 6 Case and Inquiry Based Teacher Education

intense, layered learning when there were moments of feeling control or triumph and I
gasped quickly then for air, for I would soon be flailing again madly but quietly in the
dreamlike waters, both displaced and consumed by my situation.

Michelle discusses her concern for the student as a whole person thus:

I’m not saying that we should baby the children we have in our care but to
acknowledge the need to create a deeper understanding of their whole selves not just
the bits that sit in a chair for 40 minutes and write essays and answer a few questions.

GRADUATE RESPONSES TO THE MASTER OF TEACHING

In the light of the program’s philosophy and structure, evaluation has been ongoing and
student teachers have been involved in regular discussions and extensive written
summative evaluation about the nature of the course and their reactions to various
aspects. To date graduates who have participated in follow up research record largely
positive experiences especially about the case-based Study 1 as well as practicum and
internship components of the program (Smith 1997, 1998, 1999, 2000; Ewing & Smith
2002). While these early evaluations are encouraging time will be important in
confirming whether we are able to achieve lasting reform in teacher education and have
a continuing impact upon practices in schools and classrooms. Longitudinal evaluations
of a sample of M.Teach graduates are continuing (Ewing & Smith 2002).

Each cohort who has completed their M.Teach degree has been asked to voluntarily
complete an extensive exit evaluation of their course at the post-internship conference. In
addition graduates of the M.Teach from 1997-2002 have been asked to complete a
questionnaire which requested them to think about the effectiveness of their degree in
retrospect along with their experiences as early career teachers (Ewing & Smith 2002). A
number of graduates have been interviewed to follow up the open-ended comments they
had made in the questionnaires. Some have also written narrative accounts of their
beginning teacher experiences.

More than 80% of M.Teach graduates who have responded to the evaluations have
been positive about the case based and inquiry nature of the program and stated that it
was useful in preparing them both for classroom teaching and for the profession (e.g.
Smith 1997, 1998, 1999, 2000). Responses were stronger, however, for Study 1 than Study
2. Student teachers, generally, also commented very positively on the opportunity to be
part of a K-12 Study 1 group that remained together for the two years and the
collaborative manner in which these groups operated. The opportunities to share
experiences and work cooperatively were acknowledged, although a small minority of
respondents expressed a dislike of having to work cooperatively. This latter comment
raises important questions about the need to cater for individual learning styles within
teacher education programs that are based on a particular ideology and approach to
learning.
In 1998, Gavin Little, an M Teach Honours student completed four case studies of beginning teachers. Two of these teachers had completed their M Teach in 1997 and two had graduated from another institution. He interviewed them in small groups and individually and wrote narratives of their experiences both of their first year of teaching and their preservice preparation. The M Teach graduates’ narratives reflected a very positive response to the case based approach to learning about teaching, although there were some concerns about teaching strategies used in their particular curriculum area. Both graduates were very aware of how their own past experiences had impacted strongly on their experience of their teacher education program. Their narratives provided evidence that both were strongly committed to the notion of lifelong learning within their chosen profession.

CONCLUSION

Effective teaching and learning at all levels must respond to the need to change and renew learning environments in the light of increasing social, economic and technological change. The Master of Teaching is an example of an inquiry case or problem based university program which has attempted to acknowledge student prior learning and experiences, prepare teachers in a way which recognises the complexities and challenges of teaching as a profession for the 21st century and encourage deliberate and critical reflection about teaching and learning issues which demand a new vision given the rapid change in education and its social contexts. Only continued study and research, both of inquiry and problem based learning approaches and of our teacher education graduates, will inform our optimism about the effectiveness of learning about professional practice in this way.

NOTE

1 This article incorporates excerpts from earlier paper presentations by all three authors on the use of inquiry and case based approaches to teacher education.

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PAPER 2

CHAPTER 6 Case and Inquiry Based Teacher Education

Cases within cases

Transformation and context

JILL FORSTER & MIKE HORSLEY

Case-based and problem-based teaching is the current innovation in teacher education perhaps because reflective practice is seen to equate with the most desirable pedagogy. It has been claimed that cases are effective in four main ways: learning is active, it is reflective, it is collaborative, and it occurs in an environment valuing reflection. The purpose of this study was to investigate the transformational process of learning through cases and to explore assumptions about how preservice teachers learn through case analysis in a case-based teacher education course. The results showed that individual, small-group and whole-group student reactions to cases were markedly different and influenced student collaboration and reflection. This result has major implications for how case analysis should be structured in teacher education. As well, the results supported the efficacy of using case analysis in teacher education courses — especially in their contribution to metacognitive and transformational aspects of teacher education student learning.

INTRODUCTION

To know something is not just to have ‘received’ information but also to have ... elaborated on it and questioned it, examined it in relation to other information they have learned, related it to other knowledge, and to ‘build knowledge structures’... in this way, knowledge becomes truly generative ... and can be used to interpret new situations, to solve problems, to think and to reason, and to learn. (Resnick & Klopfer, 1989)

The purpose of this study was to investigate the transformational process of learning through cases. This research is testing assumptions about how preservice teachers learn through case analysis. Case-based and problem-based teaching is the current innovation in teacher education, perhaps because reflective practice is seen to equate with the most desirable pedagogy (Shulman 1992). It has been argued that the inherent complexity and multiple layers of cases correlate to the ill-structured domain of real-life teaching situations (Shulman 1992). In particular, Morine-Dershimer suggests cases “are presumed to promote learning by encouraging prospective teachers to confront their own (tacit) beliefs and values as they analyse issues and suggest strategies for dealing with realistic problematic educational events” (Morine-Dershimer, 1996).

Shulman (1992) has claimed that cases are effective in four main ways: learning is active, it is reflective, it is collaborative, and it occurs in an environment valuing reflect-
tion. In addition Hatton (1995), in a review of the literature, has indicated that through case study, issues can become more vivid through real-life situations, trigger more lively discussion, promote an understanding of the tentativeness of educational solutions, and encourage analytical approaches to teaching and learning and foster shared responsibility as groups cooperate in problem solving – “novices learn how to frame problems, interpret complex situations and identify decision points and possible consequences” (Johnson, McRobbie & Baer 1991, p.1).

Despite these claims there is limited research providing support that case- and problem-based study is effective (Anderson & Bird 1995). In particular the research of Anderson & Bird demonstrated that cases may reinforce existing beliefs, values and attitudes and that students may not identify with the teachers professional roles in the case scenario (Anderson & Bird 1995). As well, Morine-Dershimer (1996) has identified that students’ responses and reactions to cases are influenced by the structuring of the seminar group during the consideration of the case.

In this paper we report some tentative findings that have emerged during the first year of the implementation of the Master of Teaching program at the University of Sydney. This study was designed to both examine the influence of group structuring on students’ case perceptions and at the same time explore the efficacy of the case study approach.

In particular the specific aims of this study were to:

• explore the strengths of the case study approach
• examine the processes of collaborative and cooperative learning in a preservice course which was based on problem and inquiry principles and proceeded with a case approach
• examine if differences between individual, small and large group reactions that have been reported in the literature also occurred in the Australian context
• analyse the transformation process that the case was designed to engender in the preservice teachers (including confrontation of beliefs and values, and the role of preservice teachers’ prior learning and experiences).

THE MASTER OF TEACHING PHILOSOPHY AND APPROACH

The Master of Teaching is conceptualised as a case-based course. It uses an interdisciplinary, inquiry-based approach arising from the presentation of a range of different kinds of cases over two years of study. The cases provide the main framework for the course, rather than one fragment which has been the practice in other programs trialling this kind of approach (Morine-Dershimer 1996). The cases on which the course was based were intended as example situations rather than professional exemplars and were selected to promote reflection and transformation. In each phase of the program students were encouraged to adopt a socially critical and reflective approach to the profession. Students were introduced to a variety of modes of teaching and learning based on actual school contexts. They built on these experiences to develop their own teaching styles and rationales for teaching practice. Direct observation of and experience in a range of school
and community contexts, and the use of a wide range of information and instructional technology also featured in the program.

MASTER OF TEACHING STRUCTURE
Course components are built around two major studies. In Study 1, from which the case in this research was drawn, students were grouped in multidisciplinary teams with both primary and secondary working together. Staff were also teamed so that students worked with two members of staff. Study 2 focused on the particular curriculum area that students taught – in the case of primary the six Key Learning Areas mandated for children from kindergarten to Year 6. The cases were conceptualised in different ways at different stages of the course.

In Phase 1, which ran for the first eight weeks of the program, study was based around four ‘triggers’: communicating, knowing, curriculum, and social context of education. Students framed their own questions after the presentation of stimulus material, for example videotapes of classroom interaction, collaborative activities and print material. In Phase 2, students were introduced to more detailed case material written by classroom teachers reflecting teachers’ concerns and issues within their school contexts. Contributors were teaching in a range of Sydney and rural schools across kindergarten to Year 12. They included executive staff and beginning teachers.

Students spent time analysing these cases, researching relevant policy documents and related research and resources, and formulating a response for possible plans of action.

MASTER OF TEACHING STUDENTS
The students in the two groups in this study (Groups 5 and 11) had completed an undergraduate bachelor’s degree in their proposed area of teaching speciality and had been accepted into the two-year end-on Master of Teaching degree, a preservice teaching qualification. Three of the students had other postgraduate qualifications and three of the students had honours degrees. The average age of the students was 27 and a significant proportion of them had extensive workforce experience – often in other professions. Other characteristics of the student groups are set out in the Table 1 below. There were 26 students in all, seven primary and 19 secondary. The secondary group included all Key Learning Areas except science. For this component of the course primary and secondary students worked together on a range of cases drawn from both primary and secondary contexts. A significant proportion of both groups were parents. Both groups were of similar size and composition.
THE MASTER OF TEACHING STUDY 1 COURSE

Students attended a biweekly seminar program of approximately two hours’ duration each. In addition weekly focus sessions provided resource input for the themes of the course. The 15 cases chosen for this 12-week phase of the course focused on these five themes:

- Teacher knowledge, beliefs, planning and decision-making.
- The teacher as manager.
- Student learning and development.
- Teaching and planning for student diversity.
- The curriculum: whose knowledge?

Furthermore, in examining each of the 15 cases for this phase of the course, students were encouraged to follow a generic model of case analysis which included:

- defining case issues/problems
- examining case perspectives and engaging in critical appraisal/analysis of the case knowledge, and policy documents relevant to the case
- recommending and justifying a course of action
- analysing the likely consequences of such actions, including relevant work in the students’ teaching portfolios.

Prior to examining the case reported in this research the students in both large groups had examined five cases over a two-month period. They examined these cases in a variety of ways and formats, both individually and in small and large groups. They had given presentations and analysed the cases using the generic model for case analysis. During this process the students took considerable responsibility for their own learning in context:

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### Table 1. Student group characteristics

<table>
<thead>
<tr>
<th>Teaching Area</th>
<th>Group 5</th>
<th>Group 11</th>
<th>Total</th>
<th>Total %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary</td>
<td>2</td>
<td>5</td>
<td>7</td>
<td>27%</td>
</tr>
<tr>
<td>Secondary KLA (Key Learning Area)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>English</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>12%</td>
</tr>
<tr>
<td>Maths</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>8%</td>
</tr>
<tr>
<td>LOTE</td>
<td>3</td>
<td>3</td>
<td>6</td>
<td>23%</td>
</tr>
<tr>
<td>HSIE</td>
<td>3</td>
<td>2</td>
<td>5</td>
<td>19%</td>
</tr>
<tr>
<td>ARTS</td>
<td>3</td>
<td>1</td>
<td>4</td>
<td>15%</td>
</tr>
<tr>
<td>TAS</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>4%</td>
</tr>
<tr>
<td>Total</td>
<td>14</td>
<td>12</td>
<td>26</td>
<td>100%</td>
</tr>
<tr>
<td>(Parents)</td>
<td>3</td>
<td>2</td>
<td>5</td>
<td>20%</td>
</tr>
</tbody>
</table>
Starting where the learner is at with a real life problem or challenge, then seeking to make sense of what is happening through use of existing capacities or cognitive frameworks, interacting with others involved in dealing with the same set of issues and then seeking other sources of guidance and insight which will assist the process and ensure that change and learning occur. (Fraser, 1993)

After analysing the case reported in this study the students continued with a further three case analyses. In addition students chose one case on which to base an extended written report, using the generic case model, from the 15 available. Twenty-two percent of the students subsequently chose to write about the case examined in this research.

Also, through individual e-mail accounts all students had access to the internet and the World Wide Web. Importantly for this case, the students also had access to the Faculty of Education’s Koori Centre, an Aboriginal education centre which provided resources, courses and community liaison facilities for teachers.

THE CASE
The case used in the research was Case 15 in Phase 2 of the course (this case is attached as Appendix 1). This case was prepared by teachers and lecturers from the Koori Centre. The case described classroom and school situations from these teachers’ professional experiences. All of the cases were developed by a series of meetings and workshops where teachers examined samples of previous cases and had the opportunity to discuss their potential cases with colleagues and staff teaching in the course. Two of the other cases also presented some issues about Aboriginal education.

The main student assessment task of the course was a case analysis where students were asked to select one of the 15 cases and present an analysis of research, policy and theory related to the case and suggest possible resolutions to the case’s problems and dilemmas.

THE STUDY DESIGN
As in Morine-Dershimer’s study (1996) the researchers were attempting to ‘trace the social exchanges’ of preservice teachers in small and large group discussions. This involved identifying “the transformations that occur as they ‘appropriate’ certain ideas (changes in interpretation from initial to final reaction) and to explore the factors associated with both ‘saliency’ and change (that is peer impact) and the way the interactions were planned and managed” (p.16).

The study was designed as a three-step process. In the first step data were collected from two groups during one session in their regular seminar meetings. Data collection consisted of students individually providing written responses to a series of questions about issues in the case. After reading the case they had 30 minutes to complete their written responses.

After individual consideration the students in the next step shared their initial reactions in small groups of three to five students for approximately 30 minutes. These small-group discussions were based on the same set of questions that were considered individually. After discussion the small groups were asked to provide a written consensus of their discussion. Group 1 provided an overall summary consensus for its small groups while each participant
in Group 2 provided an individual summary consensus for each of the small groups they were in. Using Morine-Dershimer’s method (1996) the study design made it possible to track an individual’s reactions to the case and their reactions in their small group. This method involved asking students to react to the case in writing as individuals and to code this reaction so it could be traced from individual to small and whole group.

In the next step students took part in a whole-group discussion. Again using the Morine-Dershimer method (1996) the students were asked to identify the key issues arising from the whole-group discussion. Again, it was possible to track students’ individual, small-group and whole-group responses. However, the whole-group discussions were undertaken in different ways by both groups. In one group students were asked to identify the three key points they derived from the discussion. In this group the whole-group discussion was managed by the seminar leader – an experienced teacher; in the other group the whole-group discussion was managed by the students without a seminar leader. In this group the students were asked, prior to the discussion, by their seminar leader to record the main points of the whole-group discussion.

It was proposed that in the second phase of the study the results of the initial analysis would be returned to the two group student leaders for their comments. After discussion with the student leadership, general discussion of the analysis and findings with both whole groups would take place. These discussions occurred after an extended period of practicum in schools and all the students in both groups were asked to indicate how and why their views on the case questions may have changed.

In addition the case writer was interviewed. She was shown the analysis and findings and was asked for her reactions to the student responses. This was to gain another perspective on the student responses. The case writer was interviewed to gain an understanding of the anticipated reasons for preparing the case and to inform the case writer about the preservice teachers’ perceptions of the case.

The six questions to which small and large groups and individuals responded were:

1. With which one of the people in this case do you identify most?
2. What is the greatest problem faced by the person with whom you identify most?
3. Whose behaviour in this case would you wish to change the most? Why?
4. What theory, research, policy documents and professional reading do you need to find to make more informed decisions about this case?
5. If you could change one aspect of the person with whom you’ve identified most what would it be?
6. What are your resolutions to the broad issues raised by this case?

These questions were developed to promote an understanding of the themes of the course that this case highlighted. Students were to explore teachers’ roles, curriculum design, meeting the needs of diverse learners, classroom management and learning as well as teacher knowledge, beliefs, planning and decision-making.
CHAPTER 6 Case and Inquiry Based Teacher Education

DATA ANALYSIS
The individual, small-group and whole-group responses were analysed to identify variations in reactions that occurred. The questions accompanying the case analysis were devised to reflect the categories of information which the study sought. These coincided with those established in Morine-Dershimer’s study (1996):

- *issues* identified in the case
- *feelings* expressed about the case
- *associated experiences* indicated
- *principles, resolutions* and actions planned about the case
- *metacognition* – reflections on approach.

A series of codings were used to examine these categories. Within these broad categories, however, many student responses were exhortations about appropriate actions and behaviours. These exhortations and commands and suggestions contained elements of issues and feelings together.

Four of the categories reflected Morine-Dershimer’s approach in examining the transformation that occurred when the students analysed the case. A fifth category – metacognitive information – was added to identify a significant aspect of the course design which promoted the reflective practitioner role. The researchers separately coded the responses to increase coding reliability which reached 95 percent.

RESULTS – FROM INDIVIDUAL TO SMALL-GROUP REACTIONS TO THE CASE
The following results are reported by examining the individual small-group and large group reactions to each of the six questions that students analysed about the case. This allows a clear tracing of the variations for each response context.

Question 1: Identification

*Individual reactions*
There were five main actors in the case scenario – the teacher, the student, the Aboriginal education assistant (AEA), the principal and the pupil’s guardians. Students were asked with whom they most identified. Individually, the majority of students identified with the AEA or the pupil in the case – the individual identification is illustrated by the following table.

<table>
<thead>
<tr>
<th>Table 2. Identification</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Student</strong></td>
</tr>
<tr>
<td>Group 5 (N=14)</td>
</tr>
<tr>
<td>Group 11 (N=12)</td>
</tr>
<tr>
<td><strong>Total (N=26)</strong></td>
</tr>
</tbody>
</table>
Very few students identified initially with the teacher, whose behaviour was at the centre of the case. The coding of the student responses revealed that the main categories were issues (meeting individual students’ needs) and associated experiences. Student responses to the question of identification have raised specific issues in relation to empathising with characters in cases compared to the professional roles of teachers within them. Although a considerable portion of the course had aimed to sensitise the students to meeting the needs of individual students and to understanding the learners’ perspective, as preservice teachers who had completed five months of a course based on developing teaching roles it was expected that they would have identified with the teacher at the centre of the case, who was struggling to implement a new educational policy. Furthermore, although the course was designed to assist students to understand individual pupil needs it seemed that prior experiences were the determining criteria for much of the identification. For example, all the parents in the course identified with the student in the case. The AEA represented both the student’s perspective and authority in that the AEA was assumed by the students to have a deep knowledge of the Aboriginal pupil’s learning needs and situation. Thus most of the responses about the AEA still identified the student dilemma as the main concern.

Small-group reactions
Discussion in small groups resulted in students shifting their identification from their individual selection. In five of the seven small groups students identified more with the AEA compared to their earlier individual identification with the student in the case. The discussion record indicates that all students shared their ideas, particularly on the matter of singling out the child (which was central to the case) and blocking communication with the AEA. The child’s needs were seen as central by all groups. In this case the students assumed that the AEA would be the advocate for the student. Interestingly, individuals from two groups did not shift at all from their identification stance. According to Morine-Dershimer (1996, p.10) “one of the expectations of case discussions is that participants will expand their own understanding by exposure to the varied perspectives of others”. In addition Morine-Dershimer has identified three modes of expansion: sharing with others (interactive), being influenced by others (influential), and listening and adapting to new ideas (generative). In these small-group discussions, interactive and generative case expansions were the most apparent. The course adopted a generic model of case analysis which involved discussion of case issues raised by students. This allowed students to develop generative and interactive skills prior to this case. As a result interactive and generative expansions were often observed but it was difficult to identify influential expansion.

Whole-group reactions
In one whole-group discussion (without seminar leader) there was a major shift in identification. In this group the whole-group discussion focused on the teacher and identified with the teacher’s situation where she was trying to incorporate an Aboriginal policy perspective into the curriculum. Comments like, “Can identify with the teacher as it seems a likely situation” and “Can see myself making the same mistake” suggested students’ changing identification.
In the other whole-group discussion there was no evidence of a shift in identification from the small-group reactions. There was, however, more recognition of the management problems that the case raised in the school. These comments reflect the school and community domain rather than the classroom domain. This group made a number of comments that were coded as metacognitive, such as “this gave us a very in-depth look at all aspects unbiased so we could step back and look at how we may have handled this”.

The discussion record shows that individual, small-group and whole-group reflections on cases varied in interactive and generative aspects. Furthermore, students’ discussion records indicate that students were using the case to come to an understanding of their beliefs and attitudes in an active, collaborative and reflective way.

Question 2: Problems and Identification
Students were asked to nominate the greatest problem faced by the person with whom they identified most. This question was designed to enable students to reflect on the key problems raised by the case.

Individual reactions
For students who identified most with the AEA, most individual reactions integrated identity, the problem and the resolution. These students identified with the AEA who they perceived as having authority/knowledge to solve the problems. Responses included: “trying to get the needs of the student met and doing this in a non-confrontational way”; “helping the teacher understand that although she is trying to be culturally inclusive she is in fact doing the opposite”; “trying to convey to the teacher that although it is a positive step the student does not want to be under the ‘spotlight’ re Aboriginality”. Even though students had identified with the AEA many of their comments related to the teacher’s problem. Responses included: “empowering the teacher with cultural sensitivity”; “the teacher will not cooperate, too quick to defend position, the teacher who lacks empathy; “placating the teacher, trying to compromise, keeping the kid in school”.

Those students who identified with the teacher mostly nominated problems of teaching from another cultural perspective, for example “problem of reconciling sensitivities to the needs of Aboriginal students and the need to educate non-Aboriginal students”. Of those who identified with the student the main problem nominated was that of being singled out from the rest of the class. Here the coding of the discussion record revealed that feelings were the main categories of response as students empathised with the pupil in the case.

Small-group reactions
Despite the initial individual identification the small groups each agreed in nominating the problem of invasion of privacy by being singled out (student), the role of the AEA in pursuing a solution to the situation and the teacher’s inadequacies in implementing policy. Each small group focused on the issues raised by the teacher’s behaviour. The discussion record was very interactive as students shared these issues.
Whole-group reactions
In one whole group the main problem nominated for this question was difficulty of trying to teach Aboriginality to non-Aboriginal children. There was a wide consensus about this problem. In the other whole group, discussion focused mainly on issues and resolutions to the problems in the case rather than the feelings and associated experiences they brought to the case.

Questions 3 and 5: Behaviour and change
Individual reactions
Despite the fact that students originally identified with the pupil or the AEA, most individual reaction focused on changing the teacher’s behaviour. Changes were recommended in developing greater empathy with the child’s situation, teaching strategies, cultural sensitivity and communicating professionally with others. Coding revealed that most individual reactions integrated issues and feelings about the case. Also, since the question directed students to consider changing character’s behaviour, many of the responses could be categorised as resolutions to the case. In addition, a number of responses were outside the categories employed in analysis. These responses identified the teacher’s need for reflective practice and referred to metacognitive issues for the teacher in the case.

Small-group reactions
The small groups responded to the question of behavioural change by focusing on the resolution of the situation according to the issues involved. The categories of feelings were much less apparent, partly as the questions directed the students to focus on resolving the problem. All groups focused on the behavioural changes needed by the teacher irrespective of the person with whom they had identified. This represented a shift from individual categories of response. Two of the small groups identified the importance of the principal’s role in managing the situation and suggested that the principal should assist more in developing dialogue in the situation.

Whole-group reactions
In one of the whole-group discussions there was a group consensus that the teacher’s behaviour needed to change and this would be achieved by professional development. The group then integrated issues and resolutions to the case.

In the other whole group, responses coincided with the small-group discussion – communication and management being the salient problems. In this group there was more concern about the pupil’s emotional state and more feelings expressed, especially in balancing the rights and responsibilities of the characters in the case.

Question 4: Making informed decisions
Individual reactions
In answering Question 4, about the research, policy documents and professional reading identified to make more informed reflection about the case, students included items from the following table:
### Table 3. Theory, research and policy documents identified

<table>
<thead>
<tr>
<th>Category</th>
<th>Group 5</th>
<th>Group 11</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Theory and Research</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cross-cultural relationships</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Research AEA and ASSPA responsibilities</td>
<td>4</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>Ethnicity and education</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Aboriginal children in schools</td>
<td>1</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Individuals in the classroom</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Cultural inclusiveness in the classroom</td>
<td>0</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Teacher expectations (nominated author)</td>
<td>0</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>2. Policy Documents</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aboriginal policy document (Torres Straight Islanders) (some don’t know exists)</td>
<td>11</td>
<td>10</td>
<td>21</td>
</tr>
<tr>
<td>Koori Centre (Implementation) (Guidelines)</td>
<td>3</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>Multicultural Education Policy</td>
<td>1</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Welfare Policy (Truancy)</td>
<td>3</td>
<td>7</td>
<td>10</td>
</tr>
<tr>
<td>School Policy</td>
<td>3</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>ATSIC Policy Documents (Policy Advice)</td>
<td>3</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Principal Responsibilities (Staff)</td>
<td>2</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Teacher Responsibilities (Teaching Strategy)</td>
<td>2</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Legal Responsibilities of Child's Guardians</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Classroom Management</td>
<td>2</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Equity Policy</td>
<td>2</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Anti-Discrimination Act</td>
<td>0</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Anti-Racism Policy</td>
<td>0</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Human Rights Act</td>
<td>0</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>UN Covenant on Rights of the Child</td>
<td>0</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Integration Policy</td>
<td>0</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Parents/School/Communication</td>
<td>0</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>
As individuals the students identified a wide range of theory, research and policy documents of which they were aware. They recognised that they would need to access those to make more informed decisions about the case. Interestingly the individuals from the two groups identified different policy documents pertinent to the case. All students had examined the same cases prior to the examination of this case. Clearly the resources identified by students depend on their view of the case and on their associated experiences and prior learnings.

Small-group reactions
One group focused on human rights issues whereas individuals in the other group focused on the school’s responsibilities and its management. These different approaches were reflected in the discussions of the small groups in what Morine-Dershimer would term as influential, “where students with strong opinions influence the thinking and discussion of the small group”.

Given that students had identified different policy documents, research and theory, the work of the small groups in responding to this question was also generative in that students shared ideas from references – in particular to identify the concepts clustered around student rights, cultural inclusion and power issues.

Whole-group reactions
In the whole-group discussion one group continued to focus on the student welfare policy as well as the Aboriginal education policy. In the other whole group the discussion focused on the teacher’s responsibility to consider the child’s needs first and foremost.

Question: Resolutions to the case

Individual reactions
The question directed students to resolve the problems of the case. As expected, many student responses to the questions were coded as resolutions. Four of the individual responses were coded as feelings and six were coded as issues. There were no responses reflecting associated experiences. The responses identified four main types of resolutions. These were:

- **Communication.** Typical comments: communication between all parties is necessary because they have got out of hand; problems should have been dealt with in the school; possibly ask the student what he/she feels would be best for him/her in this learning situation.

- **Policy implementation.** Typical comments: keep in mind that the best interest of the child is the issue; education of staff needed regarding respect for individuals in their class; consider how this relates to Aboriginal education policy and multiculturalism and multicultural policy; greater teacher awareness needed of student concerns, sensitivities and cultural factors.

- **Management.** Typical comments: the principal should have called a meeting of the AEA and teacher; the school counsellor did not have to be involved; having reached a resolution perhaps they could have included the student; the teacher and
AEA should work more closely together as the child feels more at ease going to the AEA; the child should be the immediate priority, not the Aboriginal perspective brought into the curriculum.

- **Metacognition.** Typical comments: need to do some research – objectives of Aboriginal education, how to enable children to contribute their knowledge to the classroom without focusing exclusively on one child's experience; more research on group dynamics; how to facilitate class-based research; different perspectives in classroom; gain an understanding of the various groups and individuals involved in Aboriginal education; conflict resolution skills; need to read more about minority groups and the introduction of such children into schools.

**Small-group reactions**

The small-group responses revealed the same categories of resolution as the individual. Overall the sharing of resolutions were interactive as students shared the similar resolutions that they had identified individually. One group decided to seek further resources and clarification from the Koori Centre after discussion – recognising the need for additional external resources and reference to experts in the area to resolve the case. Subsequently a number of small groups took this approach. Hence a generative approach was apparent. The management resolution identified by individuals was repeated in one small-group response as “a need for a whole school approach” reflecting the concerns of policy implementation literature.

**Whole-group reactions**

Whereas there were individual metacognitive responses this was not apparent in the small group but reappeared in the whole-group discussions: for example, “the class as a whole was highly emotional in reacting to the case study – unfortunately I wasn’t able to attend the prior class”; “given the emotions raised, (that) I couldn’t resolve any issues apart from identifying with the child’s dilemma highlights observer attitudes to group”; “people come to teaching and learning with different biases, knowledge and expectations”; “raised emotions and passions – identification important”; perspective re teaching role: meta-analysis, “this gave us a very in-depth look at all aspects unbiased so we could step back and look at how we may have handled this”.

Three students in each whole group responded in the metacognitive category. Communication, management and policy remained the main types of resolutions in both groups.

**DISCUSSION**

**The process of reflection**

What are the processes by which cases promote reflection? As revealed in the findings, Morine-Dershimer’s processes of interaction, generation and influence work to allow collaboration to be reflective. However, interaction, generation and influence are heavily dependent on the context and focus of the discussion. This study has shown that individual, small-group and whole-group case analysis have varied interactive, generational and influential effects.
While the data analysis showed no difference in reactions of either primary or secondary preservice teachers to the cases, the results presented above strongly supported Morine-Dershimer’s contention that individual, small-group and whole-group reactions to cases were markedly different. Whereas individual reactions were more likely to be dominated by empathy and feeling the small-group discussion encouraged interactive and generative learning. In the whole-group discussion a focus on teachers’ professional roles and responsibilities in cases developed as preservice teachers discussed the resolutions. This finding has major implications for the way cases are presented. Generic models of case analysis must include considerations of student grouping for discussion.

The amount of shift in identification that occurred in small groups reflects the challenges to assumptions, beliefs and prior learnings that come through collaborative examination of varying perspectives. It is not just the case that is important but the transformative processes of case presentation.

In this study there were six different case analysis questions. Different types of questions for case analyses have different influential, generative and interactive characteristics. For example, in identifying resolutions to the case all different perspectives were considered by participants to be valid. As a result, in responding to a question of this type interaction is promoted. However the question about resources elicited more influential responses. The nature of the questions asked encouraged collaborative inquiry rather than a set solution-finding process.

The role of empathy
It was apparent that when students nominated problems of the case and they identified with the student it was largely a matter of empathy. The coding revealed mainly feelings categories. When students identified mainly with the teachers it was much more a matter of issues and resolutions. It would seem that fully taking on the professional role of the teacher includes understanding the learners’ perspective and identifying with the teacher. A comment from a student after a practicum relates to this: “In the case we only saw it from the student’s point of view”. The findings were also supported by the comments of a student interviewed after the analysis of case study responses and after she had undergone the practicum. There was a shift in her identification from the student to the teacher: “I only see the big picture now – it is difficult for the teacher to respond to the little pictures” that the case exemplified. As a result of this interview the next step in the study will be to compare the individual reactions of students to the case before and after a considerable period of practice teaching.

Policy implementation
Often cases highlight the dilemma of policy implementation in the school setting. Their advantage lies in presenting naturalistic situations. This means that students can examine the context where policies apply and thereby see the real work of teachers and schools. In this way students can identify the aims of policy and the practical and professional pragmatics of implementation. Cases can be said to attach ownership of policy implementation problems to preservice teachers. For example it could be seen from case
study responses that it was often assumed that – someone else “with authority will deal with the problem”. This was supported by the fact that students nominated the Aboriginal education assistant as the one who would be most useful in resolving the dilemma. However, despite this identification many of the students discussed behaviour to be changed and resolutions advanced in the case reactions concerning the teacher’s practice. Subsequently one of the students encountered a similar situation to the case in her initial practicum and was well aware of the professional demands of the situation. This raises also the question of the extent to which cases are relevant to students’ professional induction and how this relevance is to be established. Case study could be said to avoid the impression that policies are sent out by a central authority to be filed away by the schools. Case study attaches real context to policy implementation. As one preservice teacher saw it, “Research is general, the cases were real”.

Why was the case written?

Neophytes should be seeing educational situations as problematic, able to be subjected to a variety of theoretical perspectives, requiring professional value judgements about defensible courses of action. (Hatton 1995, p.9)

To gain another perspective on the efficacy of case analysis the case writer was interviewed. It was indicated that the case was written to raise issues for non-Aboriginal people about powerlessness, authority and racism. The issues in the case were not clear-cut but were designed for preservice teachers to explore their beliefs as “beliefs lead to appropriation and teachers’ decision-making is based on their past experiences”. The way in which teachers responded to the cultural situation at the heart of the case also raised different interpretations of policy in practical situations and varied solutions to practical problems. The case writer also reinforced the need for reflective practice. In the words of the case writer: “I wanted to bring out that in the early stages of decision-making go with care, be very sure and cautious as much as you can, reflect on the action taken, there is fragility, tension – Aboriginal students are so visible”.

The preservice teachers analysing the case assumed that the AEA had authority but the case writer indicated that a major component of the case was the AEA’s lack of power and the high expectations placed on AEAs – a clear mismatch between the writer’s intention and the readers’ reactions. The significant point about case study analysis, that students are not seeking a set solution, was borne out in the case writer’s approach that they might perceive a situation but that there was not “one best way to go”. In fact what one sees as “the best situation doesn’t have the best outcome”.

The case writer saw empathy’s role as important in addressing this case. The preservice teachers were asked to relate to the effects of the Aboriginal student’s experiences and to approach the cross-cultural teaching aspects of the case. A clear policy implementation issue of the case was her recommendation to have a school-based approach to the situation where it is important for all to work together.
Cases and transformation

Cases provided inherent motivation where much learning occurred through participation. The case was successful in achieving the outcomes of reflection and transformation. Through reflection on an unresolved narrative-based case, preservice teachers came to an understanding of their beliefs and attitudes. Thus they came to make sense of their learning, defining and solving their practical problems.

Coding revealed a range of metacognitive comments. Students realised what they did not know and so they structured their own participation forward. This coincides with Ackerman’s comments: “At some point, participants begin to think differently – more critically and less self-centredly. They are challenged and inspired to think more deeply about their practice” (Ackerman et al, 1996, p.23).

From this study it can be seen that it is important that the seminar questions acknowledge that the role of prior learning and experience is crucial and require students to move beyond feelings to consider action plans and resolutions that are professionally possible. As Cranton indicates (1994, p.14), “Transformative learning occurs when through critical self-reflection, an individual revises old or develops new assumptions, beliefs or ways of seeing the world”. The generic model of case study analysis required this approach.

It has been pointed out that “learning occurs when an individual enters a process of reconciling newly communicated ideas with the presuppositions of prior learning” (Cranton 1994, p.27) – thus their learning is indeed generative. For example, immediately after the study of this case a number of students contacted the Koori Centre and conducted their own series of meetings with Koori Centre staff and studied the role and function of Aboriginal education assistants. One of the groups expressed the broader transformative issue that “people come to teaching and learning with different biases, knowledge and expectations” which they enhance to come to new understandings.

As this course attempts to do and as this research supports, for better prepared teaching we need to encourage preservice teachers to view “learning as the extension of one’s ability to make assumptions explicit, contextualise them, validate them and act on them” (Cranton, 1994, p.24).

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REFERENCES

Far West Laboratory For Educational Research and Development: San Francisco.

CASE STUDY NO. 15
This case study does not refer to a single instance, but brings together a number of similar situations to form a case study for consideration by case participants.

An Aboriginal student in Year 6 goes to the school's Aboriginal education assistant (AEA) and reveals some difficulty in dealing with their teacher. The teacher, who is trying to implement an Aboriginal perspective in the classroom, constantly refers to the child’s Aboriginality and uses the child as a ‘sounding board’ to test the viability of certain exercises.

These instances include: asking the child to describe ‘bush tucker’, referring to the child’s extended family, and calling upon the child to talk about their family life.

The student goes to the AEA to seek some help in coping with these matters. The child’s remarks are prefaced with the statement: “If they don’t leave me alone I’m gone!”

The AEA goes to speak with the teacher, first of all addressing the need for the teacher to respect the child’s privacy and not to place pressure on the student to prove their cultural knowledge. The teacher becomes extremely disturbed, pointing out that they are trying to be ‘culturally inclusive’. The teacher then asserts they have the backing of the senior staff in implementing their program and the AEA is trying to undermine their efforts because they are not indigenous.

The AEA tries to explain that it is the child who is the priority in the situation. The teacher then takes the matter to the principal, requesting some form of disciplinary action be taken against the AEA. The principal instructs the AEA not to speak with the child until the matter is resolved and that the student should be referred on to the student counsellor.
The child goes back to the AEA declaring that the teacher now refuses to acknowledge the student’s presence in the classroom and this is affecting their progress.

The child’s aunt and uncle, who are the student’s guardians, come to see the AEA in the AEA’s home, asking for help as the child is refusing to attend school. They feel unable to go to the principal because of their past experiences in dealing with education authorities. The AEA proposes that the local ASSPA committee take on the case.

The ASSPA committee meets and discusses the matter. It is recommended that the teacher, AEA, ASSPA representative and principal meet to work out a solution to the problem.

The teacher believes they have been singled out when they were trying to bring an Aboriginal perspective into the curriculum. The AEA has been trying to ease the burden of the child. The ASSPA representative is trying to bring the parents’ needs into the picture. The principal is trying to smooth everyone so that the school’s public profile is not compromised.

The child hates school and refuses to attend. Ultimately the child transfers to another school but no longer shows any motivation to learn.

*The Koori Centre, Old Teachers College, University of Sydney, March 1996. Copyright M. Teach, University of Sydney.*
NEGOTIATING THE CURRICULUM: A COMPARISON OF INQUIRY BASED APPROACHES IN MEDICAL AND TEACHER EDUCATION

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INTRODUCTION

Inquiry based approaches in professional education have proliferated in recent times and have come to be regarded as best practice in areas such as medicine and nursing, and to a lesser extent teacher education. Inquiry based approaches in these areas necessarily involve students in creating and negotiating, in collaboration with peers and teachers, aspects of their professional curriculum. Medical and nursing education have generally adopted the problem based learning mode while in teacher education the case based learning mode (Shulman, 1992) has predominated.

Problem and case based approaches in professional education have come to be regarded as best practice as they provide students with authentic learning situations which mirror the complexities of professional practice while providing time for research, discussion and reflection upon the issues raised. This paper examines problem and case based approaches in medical and teacher education respectively at The University of Sydney. The paper explores the way students in the two programs collaboratively negotiate aspects of their learning with their seminar leaders/tutors and with their peers.

MASTER OF TEACHING PROGRAM: AN OVERVIEW

The Master of Teaching Program (M'Teach) is a two year pre-service teacher education program which is organised into two major components: Study One and Study Two. The Study One component of the M'Teach is an interdisciplinary, inquiry based course in which the process of inquiry in the first year is organised around the use of cases. The course extends over the first eighteen months of the two year M'Teach program and, during the first twelve months, involves four hours of seminar and two hours of lecture time per week. Two lecturers work with each of the twelve seminar groups, each seminar group consisting of approximately eighteen students. Study One is comprised of five phases Orientation to Teaching and Learning, Preparation for the First Practicum, Post-Practicum Review of Development, Preparation for the Second Practicum and Post-Practicum and Preparation for the Internship, with durations of eight, twelve, six, eight and four weeks respectively. The Study Two component of the Master of Teaching Program incorporates the teaching method courses and will not be discussed in this presentation.

Study One commences with the Orientation to Teaching and Learning phase and is the only course of the M'Teach in operation during this eight week period. This phase provides students with an introduction to issues concerning teaching, learning.
the curriculum and the social and institutional context of education. This phase of the course is organised around the theme of *Making and Communicating Meaning* and provides an opportunity for critical reflection on the nature of schools, schooling and the educational process in general. The process of critical reflection is assisted by seminar activities, a series of lecture/focus sessions and observation visits to schools and other educational settings. Seminar activities are organised around four sets of case triggers, each of which provide the starting point for whole group, small group and individual work. The lecture/focus sessions in this phase cover such topics as communication, learning, curriculum and school reform and inequality in schools. Assessment in this phase of the course involves the keeping of a reflective journal and the writing of a personal reflection concerning students' developing understandings of their role as a teacher. This work is assessed, as is all work in the M'Teach, through a criterion referenced assessment approach.

The **Preparation for the First Practicum** phase of Study One provides the opportunity for engagement with authentic school teaching and learning situations as presented through cases written by teachers and students specially for this course. The cases provide a context within which aspects of teaching and learning can be critically examined and discussed, relevant theory, research and policy documents can be examined and applied, and plans of action to deal with the various situations described can be developed and evaluated. The cases also provide a context for the application of professional knowledge developed in the Study Two component of the M'Teach which commences at this time. In engaging with cases student seminar groups in Study One of the M'Teach make use of the following generic model:

- Seminar members define case issues/problems.
- Seminar members examine case perspectives and engage in critical appraisal and analysis of the case.
- Seminar members define and engage with the theory, research, professional knowledge and policy documents relevant to the case.
- Seminar members apply theory, research, professional knowledge and policy documents to the case.
- Seminar members recommend and justify a course of action/s in relation to the case.
- Seminar members analyse the likely consequences of such actions.
- Seminar members include relevant work in their M'Teach portfolio.

Lectures in this phase of the course are organised around four themes: *Teacher knowledge, beliefs, planning and decision making, The teacher as manager, Student learning and development and Teaching and planning for student diversity.*
Assessment in this phase of the course takes the form of a case analysis in which the assessment criteria mirror the key elements of the generic model.

In *The Post-Practicum Review of Development* phase students critically reflect on their experience, practice teaching through the writing and subsequent discussion of case studies or narratives. Case studies provide M'Teach students with the opportunity to write collaboratively about their classroom and other teaching experiences and to integrate these experiences into their developing personal philosophy of teaching. Lectures in this phase are organised around the theme *Challenges for Schools* and deal with such topics as teacher anxiety, innovation in schools, changing demands on schools and schools as learning organisations. Assessment is based on the submission of a case story at the completion of this phase.

The *Preparation for the Second Practicum* phase of Study One provides the opportunity to examine the changing nature of school and community relationships. This phase of the course, which is organised around the theme of *Communities and Schools*, highlights current key debates concerning the school as a focus in the community and community participation in schools. It also allows pre-service teachers an insight into the work of various government officers who liaise between school and community and between schools, families and relevant welfare agencies. Lectures in this phase deal with school and community issues while student assessment in this phase involves the submission of a collaborative research report dealing with some aspect of the link between school and community.

In *The Post-Practicum Review and Preparation for the Internship* phase of Study One M'Teach students examine issues concerning evaluation and accountability in teaching. This phase of the course, organised around the theme of *Evaluation and Accountability*, involves two lecture strands; one dealing with issues of school effectiveness, improvement and accountability and reporting and the other with the place of evaluation, assessment and portfolio development in planning for student learning outcomes.

**Negotiating the Curriculum in Study One**

The negotiation of the curriculum in the Master of Teaching, and more particularly in Study One, has occurred at four levels. Firstly, the framework of the entire Master of Teaching program, including the phases previously mentioned, was developed collaboratively over a period of several years (from 1993) by a group of senior academics in the Faculty of Education. Secondly a team of approximately twenty five
academics met regularly for twelve months to formulate a pedagogy and stimulus material for Study One. During this period a number of guest speakers spoke to the curriculum development group; representatives from the medical faculty spoke about problem-based learning and the clinical reasoning process in medical education while other speakers spoke about case and narrative approaches to professional training in teacher education. In the absence of a recognised model of decision making in teaching, it was decided to organise the first year of the Study One component of the Master of Teaching around the use of cases. In the Orientation to Teaching and Learning phase cases are stimulus materials for students, in the Preparation for The First Practicum phase cases are accounts of authentic teaching and learning situations written specially for this course by practicing teachers from varying teaching backgrounds and locations and with varying degrees of experience. In the Post Practicum Review of Development phase cases are the narratives written by students in the course about their own teaching experiences.

Thirdly the curriculum is negotiated by the Master of Teaching students in their collaborative seminar groups—this level of the negotiation of the curriculum is discussed in more detail in the next section of the paper. The last level of the negotiation of the curriculum arises from student feedback concerning the course. Initially student feedback was collected on a fortnightly basis by the Director of Study One (the first author) at meetings attended by representatives of all seminar groups. The organisation and running of these meetings was soon taken over by the M'Teach students and transformed into a Master of Teaching Association (which continued to provide feedback concerning the course). On the basis of this feedback significant modifications have already been made in Study One and in the Master Of Teaching Program more generally. For instance the Orientation to Teaching and Learning phase has been reduced in length to six weeks.

**Negotiating the curriculum in Study One: A case study of one seminar group.**

In Phases 1 and 2 of Study One students work collaboratively on the various stimulus materials they are given. Students collaboratively make decisions about how these materials are to be interpreted and together they decide upon the learning goals they wish to pursue and the questions they wish to research. After dividing into small groups of approximately three or four they research these issues and subsequently present their findings to the whole seminar group. These presentations may take a variety of forms with dramatic presentations being popular. Presentations are usually followed by seminar group analysis, discussion and reflection.
In this section of the paper the negotiation of the curriculum that took place in seminar group 3 with regard to Phase 2 is described. The first case to be examined in this seminar group, involving conflict between an Aboriginal student with reading difficulties and a casual English teacher, was selected by one of the two seminar leaders. Students discussed this case as a whole group and reflected upon ways of dealing with the situation described. Subsequently students spent several seminar sessions reading all of the remaining fourteen cases and voting on which of the cases they wanted the seminar group to examine over a period of seven weeks. Five cases were selected and it was decided that the first case would be examined by the whole seminar group over a period of two weeks but that four sub groups would each take responsibility for researching and organising a presentation on one of the remaining four cases.

The case examined by the whole seminar group described a six year old child with severe behaviour problems who is eventually sent to a special school for behaviourally disordered students, but is later integrated back into the school for one day a week. The case also describes the impact of this student on the behaviour of his younger twin brothers who also attended the same school.

The seminar group broke up into four independent groups to define the issues they wished to examine in relation to this case. One group of students researched the Education Reform Act of 1990, the Special Education Policy and a number of other relevant policy documents. In their quest to research the issues of concern they also contacted the legal section of the Department of School Education and and the NSW Teachers Federation. Finally they organised a presentation in the form of a court trial of the way in which the behaviour disordered child had been treated by the school system. Another group of students visited a special school for the behaviour disordered in order to understand the procedures followed in admitting students, the intervention methods used with these students in the special school, and the procedures followed in re-integrating students back into mainstream schools. Other students in this group contacted the Department of Community Services to obtain information on the way students at risk were dealt with by this agency. The third group of students researched the duties of Home School Liaison Officers and the nature of peer mediation; they also asked a school counsellor to read the case and to recommend a course of action to deal with it. This group organised a presentation in which group members spoke about the case from the perspectives of the school principal, the teacher, the school counsellor and the parent. Finally the last group researched the topic of Attention Deficit
Hyperactivity Disorder and teaching strategies for ADHD students, as well they interviewed a specialist in child abuse and neglect.

As can be seen from this account of the operation of one seminar group in Study One, the collaborative, negotiated and inquiry based approach implemented in the Master of Teaching Program allows students the opportunity to formulate and pursue their own learning goals and provides them with opportunities to access experiences not possible in more traditional teacher education programs.

THE GRADUATE MEDICAL PROGRAM: AN OVERVIEW

In keeping with a worldwide trend in medical education away from overloaded curricula, and in response to the perceived need to equip students with skills necessary for a life of self-education, in 1992 the Faculty of Medicine made the decision to discontinue its undergraduate curriculum and introduce a problem-based, graduate entry program (Graduate Medical Program, Outline, 1997). The Undergraduate Medical Program at the University of Sydney is traditionally organised according to disciplines and is not well integrated across subjects and years (Sefton, 1995). The new Graduate Medical Program (GMP) is built around problem-based learning (PBL). PBL involves students working cooperatively in small group tutorials to tackle a diagnostic or management problem or ‘clinical case’. A key feature of PBL is that students are encouraged to identify their own learning objectives and regulate their process of study. However, in developing the GMP, there has been a tension between adopting an entirely student-centred, self-directed approach “and the need to be confident that essential elements of knowledge, skills and behaviours are included” (Sefton & Field, 1996, p. 114).

In Years One and Two of the GMP, students attend three 90 minute tutorials per week, five sessions (eg, Anatomy, Biochemistry, Community Medicine practical sessions) and up to five lectures per week. Remaining time is left unstructured for students’, including time during their weekly visit to a major teaching hospital.

In Year One, most problems have a diagnostic focus. Some have a management focus, in which the emphasis is on planning and managing treatment. At the beginning of the first tutorial students are provided with a problem trigger or brief ‘case presentation’. During this tutorial, and in following sessions, they engage in an iterative process of reasoning and goal setting. Students generate hypotheses in terms of underlying mechanisms, seek data to distinguish between hypotheses, link mechanisms with symptoms in explanations, and define learning issues, or things that they need to find
out more about. Between tutorials the group separates, and students engage in independent study guided by their learning issues, learning resources and other structured teaching sessions (e.g., lectures).

In Years One and Two there are a total of 70 problems grouped into nine blocks broadly based on body systems. The first block, Lifespan and Lifestyle, is intended as an introduction to the body and to major principles of basic and clinical science. Other blocks include Musculoskeletal, Cardiovascular and Respiratory. Two Blocks, Haematology and Cancer, Palliation are held entirely in the Clinical Schools (Graduate Medical Program, Outline, 1997).

Negotiating the curriculum

The curriculum of the GMP is negotiated at three main levels: (1) Faculty to Faculty negotiation about content and best teaching practice, (2) PBL Tutor to Group negotiation about what students should be learning, and (3) Student to Faculty negotiation about how to organise experiences to optimise students’ experience. The third level of negotiation, in particular, centres on an open system of communication for course evaluation. Each level is discussed in turn below.

At the Faculty to Faculty level, a central core of senior Faculty members committed to curriculum development and a student-centred philosophy has led the negotiation process with academic and clinical teaching staff since the early 1990’s. Content coverage continues to be the most important negotiated issue. During the period 1995-96, people were keen to ensure that the new course would cover all the knowledge and skills students need in order to be competent graduates. There was some disquiet about the demise of discipline-based frameworks of knowledge. For example, there was concern, “that the new curriculum of only [70] cases might not be sufficient to provide students with adequate knowledge of medicine” and that, “the importance of teaching the discipline [would be] downgraded and sufficient knowledge [would] not be able to be imparted to students who have no prior knowledge” (Hendry & Gordon, 1996).

Negotiation about content coverage has occurred in two main ways: (1) informal and formal submissions by interdisciplinary Unit Planning Teams to a computer database that contains the discipline areas to be addressed by each problem (Field & Sefton, 1996), and (2) submission by Faculty “experts” of one to two page written summaries, called learning topics, of key areas of knowledge relevant to each problem. A database served as a mechanism for Faculty to collaborate in mapping out the first two years of the new curriculum. In some cases, submitted material was condensed “into a single
problem with multiple dimensions” (p. 104). Learning topics have been published as learning resources - up to eight per problem - on the GMP intranet, which delivers the problem triggers and a range of other resources (e.g. Xrays, slide images, laboratory reports) for the entire 70 problems (see below). The learning topics are seen as the areas of knowledge that students are expected to cover during the learning week. They have provided Faculty members with assurance about content coverage, and the finished product gives students a framework for their learning. Although these ways of negotiating content coverage have successfully eased curriculum change, they may, however, also have left the prototype problem week overly content laden.

The second level at which the curriculum is negotiated in the GMP is Tutor to Group. Over 200 Faculty members have volunteered for PBL tutoring; approximately one third are clinical academic staff. The PBL tutor training workshops cover a number of important concepts: student-centred teaching; the model of PBL to be used; the concept of evidence-based medicine in relation to PBL and the use of information technology in PBL tutorials. The overall aim of training is to help tutors become more skilful in facilitating students’ learning (Hendry & Gordon, 1996).

Tutors are provided with a five-page Tutor Guide that outlines the PBL and clinical reasoning process under the headings:
- identify cues
- problem formulation
- hypothesis generation and organisation
- enquiry plan and information gathering
- diagnostic decision
- management
- outcome

The Guide lists students’ possible responses, likely discussion points, and questions that could be asked of the group as well as the Faculty negotiated learning topics. In the first tutorial students access the problem trigger from a computer terminal in their room and interpret cues, or signs of normality and abnormality, in the presentation displayed on the computer’s monitor. For example, the trigger for the first problem in Block one, I’m not sick ..., consists of still images and sound showing mother, 14 year old daughter (thin, uncooperative, evasive), and doctor in a consulting room (Tutor Guide for Problem 1.01, Faculty of Medicine, University of Sydney). Students are prompted by their tutor to formulate and express a concise statement about the situation, and to think broadly and logically about the possible cause(s) of the presentation in terms of basic science mechanisms and epidemiological evidence. The statement is written up on
a whiteboard (one person usually acting as a ‘scribe’). The tutor encourages students to express and discuss their hypotheses, and these are also written up on the whiteboard. Students suggest explanations linking mechanisms to symptoms. During discussion they recall what they know about various topics and issues, and in the process define what they do not know and need to find out more about. If students do not generate learning issues that correspond to a learning topic, then the tutor is expected to prompt them directly. At the end of the session students receive up to four learning topics, and divide and allocate their learning issues (Tutor Guide for Problem 1.01, Faculty of Medicine, University of Sydney).

Between the first and second tutorials students have the opportunity to attend up to three lectures and two integrated practical sessions. Attendance at lectures and practical sessions is not compulsory. In their second tutorial students explain to the group what they have learned on their own or in smaller groups. They formulate a plan of enquiry to distinguish between hypotheses, and may request specific information (eg, laboratory results, physical findings, or a patient’s response to initial treatment) from their tutor (Tutor Guide for Problem 1.01, Faculty of Medicine, University of Sydney). Tutors are supplied with a patient data sheet that contains a range of test results and relevant background information about the patient. This sheet cannot be accessed by students until after the second tutorial. As discussion proceeds, further learning issues may be defined. At the end of the session, students receive the appropriate learning topics, separate and may attend remaining lectures and practical sessions. They also spend one day in their clinical school (based at a major teaching hospital), and participate in a 90-minute communication skills tutorial and a 90-minute physical examination skills tutorial integrated with the problem. In the final PBL tutorial students review what they have learned since tutorial two and discuss the outcome of the ‘case’ - accessed online - before beginning the whole weekly learning process again.

Groups almost always spontaneously identify all the learning topics for each problem. During the first Block, Lifespan and Lifestyle, that contains eleven problems, tutors’ weekly mean ratings of how well groups identified learning topics only ever equalled or exceeded the level, “Had to be pushed (with direct questions)”, for one problem.

In sum, in PBL tutorials students collaborate to formulate an explanation of the problem and to decide the issues they need to learn more about (eg, Stepien, Gallagher & Workman, 1993). The tutor may intervene (eg, by asking a question) to refocus discussion, change the direction of students’ thinking or prompt them to reflect on how they are reasoning. Students know they will be supplied with several learning topics deemed by Faculty to be important to the problem. The curriculum as taught is
negotiated between students themselves, and between students and their tutor, the authors of learning topics and teachers in other structured sessions (eg. through questioning and activities in lectures).

The third level at which the curriculum is negotiated in the GMP is Student to Faculty through electronic and face-to-face communication in an organised system of course evaluation. The evaluation system has been designed with the fundamental aim of maintaining and improving the quality of the program.

A feedback button mechanism on every page of the GMP intranet allows students to comment about course features or personal learning experiences at any time. This feedback is received by the Department of Educational Development and Evaluation (DEDE) from where it can be routed to almost any person concerned within the Faculty. When comments have referred, for example, to faults in problem resources, or timetabling errors, changes have been made rapidly and students benefit almost immediately. As well as the feedback button, at the end of a problem PBL groups can provide information about the learning week via a short, open ended form on the intranet. Groups comment on what was most useful for their learning and what improvements could be made. Specific suggestions have included changes to problem triggers, improving the organisation and presentation of some lectures and reducing the level of detail in some learning topics.

Perhaps the most explicit and comprehensive feedback about the GMP has been received through student feedback meetings attended by all group secretaries (PBL group representatives). The key to the success of these meetings is creating a relaxed, permissive atmosphere in which students can freely express their views. Issues raised concerning best practice include lecturer styles and access to overheads and diagrams used in lectures, structured teaching in Anatomy, and match of lectures with the problem of the week. In a PBL course, a lecture should be integrated with the problem (McPherson, 1995). The nature of the GMP motivates students to look for basic pointers to guide their learning. Lecturers should aim to provide explanations of overall and/or difficult concepts through which people can interpret detailed information in their reading.

Underlying the negotiation of the GMP curriculum is a change in the philosophy of teaching practice from teacher- to student-centred. Many Faculty hold an objectivist view, in which knowledge exists independently of knowing minds and can be accurately communicated or transferred. Learning is seen as the process of covering content and thus teaching and specifically lecturing is equated directly with learning. A
good lecture is one that is packed with content and comprehensively describes several topics leading to acquisition of a maximum amount of knowledge. If students do not learn from such a lecture, then this is often seen as the fault of students’ rather than any flaw in the method. Negotiating the new curriculum involves shifts in philosophy, responsibility and trust as well as growth in ideas about best practice. Shifts in philosophy may often lag behind shifts in curriculum organisation. Good teachers become less responsible for covering knowledge and more responsible for inventing structured experiences, and students are trusted to be motivated enough to learn what they need to know.

References
Graduate Medical Program, Outline, Faculty of Medicine, University of Sydney, 1997.
Chapter 7

Embedding Information Technology in Teaching
CHAPTER 7

Embedding Information Technology in Teaching

7.1 The Publications


These publications comprise two papers presented at professional teachers' conferences and one refereed conference paper. The former offer a synthesis and overview of research on professional development undertaken in some of the partnerships schools of the Faculty of Education and Social Work at the University of Sydney and the Economics and Business Studies Professional Teachers Association. These papers on innovations and interventions in these schools focus on the embedding of technology into the classrooms of a number of teachers.

The participant teachers undertook collaborative professional development and subsequent action research on the learning and perceptions of learning within the new online sessions in their classrooms. The research included action research elements and also used data collected by the author on the progress and success of the embedding of information technology into the classrooms of these teachers and schools. This research was published by the Economics and Business Studies, Professional Teachers' Association as a partner in the development of the research project.

The refereed conference paper was presented at the International Conference on the 'Future of the Book' in Cairns. The study was unique in that it utilised research from the classrooms of the collaborative professional development projects and the author's textbook research to develop a comparison of online and print based learning in online classrooms, and the way that print and digital resources interact with each other from the perspective of learners.
7.2 Research Purpose

The purpose of the research papers on professional development was to design successful and effective professional development programs to assist teachers to embed technology into their teaching. Downes's research (2002) highlighted the need for protocols to meet the professional development needs of teachers as they embrace technology to teach their subject areas, and help their students achieve the required learning outcomes. The research presented in the portfolio sought to gather the perceptions of the students as they experienced online learning as their teachers digitise teaching programs that had been previously been offered in print form. In this research the use of printed materials in online learning environments was also explored.

The purpose of the research was closely aligned to the need to develop professional wisdom, and to develop a well articulated knowledge base through the examination of practice. A specific purpose of the research was to include students and teachers as co-researchers in collaborative inquiry. The school based nature of the research was designed to inform other teachers and schools in the partnership schools of the university and the professional association partnership. The research was designed to be practitioner focused, so that its dissemination would be rapid and grounded in the wisdom of reflecting on classroom practice.
Faculty of Education Sydney University
Mercy College Chatswood
Partnership Project Technology Project

Mercy College Chatswood
School Homepage

This website has been developed through a technology and professional development project involving Sydney University’s Faculty of Education Partnerships Division and Mercy College Chatwood.

The partnership project has involved a sequence of Stages

Stage 1 Planning and Identification of Needs - A meeting with the School Principal and staff Mrs. Jenny Allen, Jan Wilson, Jenny Wells and Peter Clifford, Mike Horsley and Jacqui Manuel, from the Faculty of Education and Bronwyn Hession, from the CSO Broken Bay was held to identify possible options for integrating ICT into the English and HSIE Curriculum.

Stage 2 Staff Training - A number of professional development courses were held in the Faculty of Education and at the school to develop the ability of the staff to design web environments to facilitate the embedding of ICT across the English and HSIE curriculum. Staff included Jenny Wells, Kerry McGonigal, Peter and Jane Houston.

Stage 3 Development of Web Based Units of Work - Peter Clifford with assistance from Mat Palmer (intern from mteach) developed a web based unit of work for Year 10 Commerce. The url for this unit of work can be found on the projects page in this website.

Stage 4 Development of a Communication and Mentoring Project - this was designed for Year 10 English and Year 12 Economics and Business Studies students at the school. The website for these projects are to be found at http://alex.edfac.usyd.edu.au/Methods/HSIE/mercy_chat.html (Economics and Business) and http://alex.edfac.usyd.edu.au/Methods/HSIE/mercy_chat_english.html (English). It was great to see a distance education student from Fiji join in to the chatline on the internet for assistance with his course.

Stage 5 Presentation of Progress at the Mercy Schools Professional Development Day. At this professional development opportunity Peter Clifford from Mercy College and Mike Horsley from the Faculty outlined progress that had been made in the development of the partnership. A website was created for the professional development opportunity. http://alex.edfac.usyd.edu.au/Methods/HSIE/mercy_talk.html

Stage 6 Action Research Presentation - Peter Clifford developed a powerpoint presentation of his action research project on embedding ICT into a unit of work and reorganising his teaching with Year 12. The powerpoint is available online at the following address http://alex.edfac.usyd.edu.au/Methods/HSIE/HTML%20Presentation%20folder/sld001.htm. Peter has subsequently made a video and digital photos of his Year 10 commerce class in action on the web.

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Partnership technology school project
7.3 Research Methodology

The research employed mixed methodologies. Much of the data was collected through action research and action learning by the teachers involved in the partnership projects.

The author

a) conducted a range of interviews and collected focus group data from interviews with students who experienced online learning;

b) undertook observational analysis of a number of the online lessons, and

c) prepared field notes for analysis.

The publications presented in this portfolio draw on the methodologies described and the data they generated. Teachers involved in the projects also completed survey instruments prior to their participation in the professional development activities they undertook to embed technology in their teaching. The use of mixed methodologies added to the validity and reliability of the research design and data because of its triangulated nature. The research examined how to design professional development to assist teachers to embed technology in their teaching and classrooms.

7.4 Recognition of the Research

According to Sachs (2003) partnerships and collaborations are key aspects of the activist professional project. This is because they link schools, teachers, teacher educators and researchers in ways that allow them to pool their varied expertises.
Collaborative partnerships in the view of Furlong (2000), are complementary because they allow the partners to pool resources, skills and experiences for the ultimate benefit of the students. The research presented in this chapter embedded the collaborative partnerships into the culture and practices of the school. As a result, the research has had a number of impacts on policy and practice.

In the first instance, the research demonstrated best practice in designing professional development in integrating ICT for teachers. As a result, many teachers in a range of schools (over 50 teachers in seven schools) have successfully embedded technology in their teaching. Because the research has been disseminated widely at teacher professional association conferences, teachers have instant access to other practitioners, who can assist them with insights grounded in practice in school application.

In the second instance the research has been used as the basis of a new undergraduate course in secondary Bachelor of Education in the Faculty of Education, University of Sydney (Information Technology Project), where students work with schools to develop an embedded technology project at the University in their coursework, and then deliver the project in schools in a technology internship. This course has been based on the design of professional development affirmed by this research. In the third instance the research has provided the theoretical basis for one large scale and two small scale funded, projects on assisting teachers to teach their subject through technology. One Federal Government funded project, the NSW History Project, assisted over 20 teachers to teach history through technology and undertake action research on their implementation of this innovation in their classrooms.
Welcome to the new-look NSW History Project web site!

The new site has been redesigned, and now includes the following sections:

>> About the NSW History Project

>> Links to History in Education

>> The Discussion Room

>> Action Research Projects

This section includes Action Research Projects, Reports, and Practitioner Research in History.

>> Historical Inquiry

This section includes several Historical Inquiry Case Studies.

>> IT In History

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Website of the NSW History Project, with teacher action research projects
PAPER 1

Putting The schools’ lessons and program online
Lessons we are learning

Mike Horsley, Faculty of Education, University of Sydney

(With Thanks to Kim Jackson, Bernadette Henry and Tim Lennon)

The Online Revolution Message
HSC Online Study
New Zealand Study
Can Online Learning Improve Learning Outcomes
Critical Issues
Schools and students involved in the project
Principles of Site design
Project Design
Students Responses To Subject Matter Content
Teachers Perceptions
Teacher reflections on roles
Conclusions
Challenges
Focus Research
Net Characteristics of Young People

Websites discussed in this research:

- The Year 11 Economics Site is at http://alex.edfac.usyd.edu.au/Methods/HSIE/index.htm
- The Mercy College Partnership website is at http://alex.edfac.usyd.edu.au/home/Mercy%20College%20site/index.html
The Online Revolution Message

Each day brings news of the expansion of the opportunities for online learning. From recent online Quality Teacher Programs (QTP) to a new online university (for 100 000 students at lower costs of course) envisaged by the Australian Labour Party (ALP) in its proposed Federal election higher education policy.

The growth in this area, in relation to school education is rapid and diverse, extending across both the public and private sector. The Queensland Department of Education is into the second year of its Virtual Schooling Service. Virtual lessons will be available over the web for senior subjects in 23 pilot schools. Mawson Lakes High School in Adelaide is advertising the fact that “if children are unable to travel they can stay at home and access the internet “. In 2000 the Catholic Education Commission in New South Wales conducted a trial offering of an Ancient History preliminary topic online. For the first time OTEN DE in New South Wales has developed a resources support website for distance education modules that it offers in Economics and Business Studies to students from all over the world. Publishers increasingly offer website support for their textbooks and other publications. The Curriculum Corporation has bought the WorldSchool homework support business and is offering curriculum support online also through its Resource Bank software and website.

A number of Virtual Schools have been established such as, Net Grammar in New South Wales. The Board of Studies, the NSW DET and Charles Sturt University have developed HSC Online a student tutorial and teacher professional development website. The NSW Principals association, with the DET and UTS has also commenced a pilot project to offer Preliminary courses online in six NSW Government schools. The idea in this pilot is to offer a virtual classroom environment, with online teaching and learning.

A small number of teachers have developed web quests to present lessons in a different way, using the graphic powers of the world wide web and web images to design lesson resources that can be delivered online. First proposed by Bernie Dodge at the University of San Diego, web quest sites for teachers have proliferated rapidly and now are widely used to support learning.

It may be tempting to imagine that technology, especially the world wide web is

- revolutionising teaching and learning
- changing teaching practice and student learning and
- allowing students to improve their learning outcomes.

However the picture emerging from research studies contradicts some of the claims made for educational use of technology and the internet. A number of research studies point to limited use of technology and the internet in learning in schools. These studies are discussed in the following sections.
HSC Online Study

Hall (2000) researched use of the Geography HSC online node. In 1997 a HSC online site was established jointly by the NSW Board of Studies, the NSW DET and Charles Sturt University. The aim of HSC online was to provide HSC students with tutorial material on specific topics, access to reviewed URL’s, information from the Board of Studies and access to a virtual education library. For teachers, the site provided a Professional Teachers Association node and material relevant to the implementation of the new 2001 HSC. Despite its marketing and profile an evaluation study of the Geography node in seven schools revealed that:

- There was no teacher lead use of the HSC online geography node in any schools;
- Of 324 Geography teachers surveyed 2/3 had never used HSC online, much less the Geography node;
- Of the 124 Geography teachers reporting use of the node only 3.2% reported frequent use (the survey was completed at Geography Inservice courses where the site was developed and teachers had the opportunity to browse the site);
- The greatest reported use of the node is to ‘print out information for distribution to students’, to refer students for their own revision and to locate reference material; and
- Teachers are reacting against online support in favour of print or face to face support ‘print based materials are regarded more favourably.’

New Zealand Study

A New Zealand Study reported Brown (2002) surveyed 50 teachers nominated by their schools as proficient in the use of IT in the classroom. The results from research into this subset of teachers should that:

- The majority of teachers report that they received only poor or adequate support in their use of the Internet in teaching;
- Only 40% had access to the internet in their own classrooms;
- Few of the teachers reported that they had succeeded in integrating the web into their teaching;
- The connectivity of the net does not appear to be exploited by this expert group of teachers with ICT knowledge;
- Major use of the internet by the teachers’ students’ appears to be email, designing web pages, responding to surveys and virtual field trips, ask the expert and social action surveys, rather than actually the subject matter using information and communication technologies; and
• There is no evidence to suggest that internet activities are replacing traditional teaching and learning approaches.

Research in schools based on observation of classroom practice and teaching resources with teachers, head teachers and principals typically reveal these findings. This is stark contrast to much of the research, claims and hype about the use of technology and the internet in teaching and learning.

Can Online Learning Improve Learning Outcomes

However, some research on the role of ICT in teaching and learning has developed insights about how technologies improve learning outcomes. This research reveals that certain conditions must be met for classroom use of technologies (especially internet technologies) to improve learning outcomes in any meaningful way.

In particular the Milliken exchange has developed a framework for these conditions.

According to this framework improving learning outcomes with technology in the classroom depends on

• How the students use the technology they have?
• How much time they spend on the computer?
• How the technology been combined with good teaching practice?
• How the teacher uses the technologies and integrates it into the curriculum?
• How the technology is used in assessment?
• How the school supports the use of technology in the curriculum?
• How the teacher approaches professional development?

Furthermore a 1996 review based on 176 research studies and reviews found that (IESD 1996) good teaching practice combined with technology can improve learning outcomes in the following way

• Significant positive affect on achievement;
• Positive effect on attitudes to learning and self concept;
• Learning becomes more students centred cooperative and exhibits more student teacher interaction; and
• Access can be improved to learning for students with disabilities because of adaptive, individualised application of IT.
In reflecting on this research the developers of the project described in this paper identified some critical issues that teachers would need to consider if they were to embed technology in their teaching by designing a website to provide students with an online learning environment for a topic. These critical issues were:

- Do Students learn as effectively in online environment compared to face to face?
- Can senior school material currently be presented that is appropriate to curriculum outcomes?
- To be successful in this mode of instruction, what support do students need at their schools?
- How would the role of teachers change if topics were presented online rather than in face to face delivery?
- How would students react to the changed teaching and learning environment?

**The Project**

With these issues in mind, students from the Master of Teaching at Sydney University designed a website for the NSW Preliminary HSC Topic Five Financial Markets. The purpose of the website was to provide an on-line learning resource. Year 11 Economics students from Kingsgrove North High School in South West Sydney used this website in Term Three 2000. The syllabus outcomes that the students were to achieve are indicated below (Board of Studies 1999)

- Students can demonstrate an understanding of financial terms, concepts and relationships;
- Students can explain the economic role of financial institutions and government;
- Students can apply appropriate financial terminology, concepts and theories in economic contexts;
- Students can select and organise information from the internet; and
- Students can communicate financial information, ideas and issues.
Principles of Site design

Teachers prepare and teach lessons in school drawn from the program that have been developed in schools. They teach topics that are drawn from mandated Board of Studies Syllabuses. They develop programs to meet the needs of their diverse students and resource their teaching by procuring new and reusing existing resources. Most internet or online course offerings have not been based on the programs and lessons that teachers teach in their schools.

Instead most research and development in this area proceeds in the following way:

- Agencies external to the school develop online learning environments;
- The online learning environments are rich and incorporate advanced instructional design;
- The environments require considerable investment, resourcing and support; and
- The effect of the learning environments on students is examined and researched.

Most of this research is not immediately practical for use in schools or is easily adapted into a school environment. The focus of this research was to develop an online learning environment to be offered:

- Within the schools existing technology resources;
- Using the schools existing program;
- With the class teacher present; and
- With the class teacher adopting a different teaching role and style as a facilitator in an online environment.

The online learning environment developed and researched was school driven and supported and explored the teachers classroom role in detail. The site was developed by the University, schools and Master of Teaching students using a constructivist approach.

The Constructivist approach to the design of instructional materials is in this site and project featured:

- Learners were required to engage with the materials;
- Learners were expected to analyse, synthesise, summarise, describe, and solve problems;
- Learners were interacts with expert;
- Learners were invited to explore others both in synchronous and asynchronous environment with guidance;
Learners were expected to build up own hypothesis, categories through study of examples and reflection on their own experience; and

Learners were moved back and forward between symbolic representation of phenomena and the real life referent.

The internet seems a likely and useful tool to construct such learning environments, because it is open ended, interactive and user centred and allways problem solving, collaboration and the application of skills to be emphasised in the site design.

As in the face to face teaching and learning the online teaching and learning environment featured the following strategies

- Student and teacher contact and interaction;
- Cooperation between students;
- Active learning;
- Prompt feedback;
- Time on task;
- High expectations for student achieving; and
- Respect diverse talents and ways of learning.

The Project Design

The project was designed in these stages

Stage One

- Locate links relating to the syllabus;
- Design a theme and activities for the website; and
- Design a student activities folder.

Stage Two

- Provide instructions on using the website and the activities booklet to the teacher and student;
- 12 x 40 minute lessons in the computer room; and
- 14 students from the class and the teacher de-briefed.

Stage Three

- Collection of data, via unstructured interviewing and observation of teachers and students; and
Interviews which covered the content, availability and accessibility of the technology, usefulness of the booklet and time considerations in learning on-line.

Students Responses To Online Teaching and Learning

The student identified four key advantages of being in an online teaching environment

- The website was up-to-date and gave realistic examples;
- It was easy to understand;
- There was no need to ask the teacher as many questions; and
- The whole world of resources is easily accessible.

They also identified four critical disadvantages of learning this way

- The writing in the websites was too advanced;
- The teacher was needed to explain the concepts;
- Many students bypassed preferences for more discussion rather than using the computer; and
- It was difficult to learn from the internet for many reasons.

Student also made comments about the way the website changed their learning

- It was helpful because it was self-paced and could be used at home and at school; and
- The webpage was fun and interactive, rather than copying down notes.

Students also responded to the way their note taking and assessment in the topic booklets were related;

- The booklet was very helpful because it provided variety and was activity based;
- The booklet can be used as a study tool;
- The structure of the booklet clearly linked with the webpage; and
- It was good because the booklet covered the whole unit.

Student Responses to the Time Available

- Some students had a reasonable amount of time, others thought the time was insufficient
CHAPTER 7 Embedding Information Technology in Teaching

Teachers Perceptions

At the completion of the twelve lesson unit of work (financial section) topic the teacher was interviewed to record her perceptions of the critical issues involved in teaching in an online role. Her comments included;

- The online environment was really useful in terms of getting the kids involved in learning, actually being able to do things themselves at their own pace.
- The fact that it was self paced was a bonus for many students as they increased their skills in self-directed learning.
- The online learning environment was too lock step for some students who would have appreciated more lateral design in the Missions in the website.
- ‘Teaching this way keeps you sharp and on the ball’ - You are dealing with students questions, response to their questions all the time and from different topic and content areas and at different levels.
- Students started making the links. It wasn’t the teacher doing all the synthesising. This comment reflects increased activity by the student to construct knowledge.
- Some students are much better than the others in doing this synthesising - this came out in reflection of the students. Many students have self directed, self regulation skills.
- Surface and depth learning needs to be reconceptualising, students made meaning but not necessarily the meaning wanted. This synthesising requires some relinquishing of teacher control.
- Keeping track of where the students are up to is difficult. As each student created their own path through the topics and resources on the website it was difficult for the teacher to measure achievement or gauge prior learning.

Teacher Reflections on the facilitative teaching role

The teacher was asked to reflect on the change in her role in an online learning envrionment

- Still a need to explain things to the students, engagement needs and requires mediation and explanation. Depth is a problem on the internet and requires professional discretion “How much do we need to know about certain topics and concepts?”
- You became facilitator rather than a teacher; kids liked this change and the worksheet took account of this experience.
- The facilitator role means that the teacher can concentrate on the process of learning rather than presenting the information.
The interaction between the students was very valuable, as there was one computer between two students, they worked in pairs; they took the unit on as a common task and supported each others learning.

Conclusions

The conclusions of this study correlate with research on other school based online learning environments developed in school community partnerships.

Entire unit of courses should not be based on using online learning environments. Other teaching methodologies need to be incorporated. For example students could work in groups and present the findings at the end of the online sessions. The internet work could be set as a project or homework to increase the amount of teacher to student interaction in the classroom.

The learning was very task oriented and higher order questions need to be incorporated into the activities. Some students did not find the internet a useful learning tool. Most students found the internet a fun, different and useful learning tool, but many students need to develop self-directed learning and regulation skills to take full advantage of online learning environment.

Online learning reduced the amount of student / teacher interaction. Students asked more questions relating to the tasks rather than the subject matter. Learning on-line needs to be combined with other teaching methodologies, for example discussion and class time. The accessibility and availability of technology can have a large impact on accessing the internet.

There is a degree of computer literacy assumed in using computers, for the students and the teachers. This needs to be considered in the learning styles of the students.

It is important to vary the teaching methodology as the students found the combination of the activities book and the website very useful.
PAPER 2

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Reports from the Ecotone:
Comparing Virtual and Real Resources in Classrooms

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It has been predicted that ‘textbooks like other print cultures are expected to vanish into the internet trash compactor’. However, research conducted in school classrooms by the TREAT unit at the University of Sydney has found that books are used, albeit differently, in online learning environments.

This paper explores the information needs of learners and how those needs are met in classrooms. It uses the conceptual model of ‘ecotone’ from biology to explain how different learning resources are used by teachers and learners.
Reports from the Ecotone: Comparing Virtual and Real Resources in Classrooms

Mike Horsley University of Sydney

Deschooling Scenarios

In 2001 the OECD’s (Organisation for Economic Cooperation and Development 2001) Centre for Educational Research and Innovation developed six scenarios for schools in the future. The first group of scenarios project a continuation of the existing features of schools. In one of the second group of scenarios, schools have become flexible “learning organisations” with a strong knowledge focus and highly motivated teachers. In the third group of scenarios two “de-schooling” futures involve the dismantling of much of school institutions and systems. In Scenario 5, this comes about through the widespread establishment of non-formal learning networks, facilitated both by ICT and a “network society” environment.

Although only one deschooling scenario based around ICT reconfiguring the learning process was envisaged, it is this possibility that has captured thinking about the role of information technology in the future classrooms. In Australia, as in other OECD countries, Governments seem committed to creating the online learning future. Each day brings news of investment in opportunities for online learning. Australia is investing $130 million dollars in online Quality Teacher Programs (QTP) International reviews of similar expenditures by other Government can be found in Sharp (2000) and Kemp (2001). Recently, the the Learning Federation, supported by all Australian Governments is to create schools online curriculum content at a cost of over $70 million.

Investment in Technology Education

The growth in this area, in relation to school education is rapid and diverse, extending across both the public and private sector. Many Departments of Education have commenced Virtual Schooling Services.

- Virtual lessons are available over the web for many subjects.
- Mawson Lakes High School in Adelaide is advertising the fact that “if children are unable to travel they can stay at home and access the internet”.
- Australia’s Curriculum Corporation is preparing to offer schools online curriculum websites.
- Australian educational publishers increasingly offer website support for their textbooks and other publications.
- A range of Australian Primary and Secondary schools keep all assessment tasks and assessment data on their intranets, available for students and parents to inspect.
Homework support businesses have been established and are offering curriculum support on line.

Virtual Schools have been established such as Net Grammar in New South Wales.

Teacher professional development websites are proliferating.

Innumerable studies are researching the development, operation and effectiveness of virtual classroom environments.

Teachers have developed webquests to present lessons in a different way, using the graphic powers of the world wide web and web images to design lesson resources that can be delivered on line.

An increasing number of teachers sites inhabit the internet, providing lesson plans and teaching programs.

The Old Economy Lives

It may be tempting to imagine that technology, especially the internet, is revolutionising teaching and learning, changing teaching practice and student learning, and allowing students to improve their learning outcomes. However the picture emerging from research studies contradicts some of the claims made for educational use of technology and the internet. Many research studies point to limited use of technology and the internet in learning in schools. Increasingly, Dede’s view (1998) is being expressed by researchers and experienced practitioners in ICT

“New technologies can help transform schools but only if they are used to support new models of teaching and learning .. the best role for technology is to make community centred constructivist classrooms sustainable for the teachers”

Yet the deschooling scenario based on an emerging net global education system transforming the traditional school and making them redundant seems to be the current orthodoxy. Many researchers believe that a net education methodology is redefining schooling in terms of information models. Educational journals reflect the views of Kathleen Medina, Mathew Pigg, Gail Desler and Gil Gorospe who in Phi Delta Kappan write “ in one fell swoop, the technology revolution may accomplish what 10 years of education reform could not. The preparation that we have traditionally provided for teacher no longer allows them to maintain the status of sage with any credibility, because they can not know as much as the Internet can make available to their students”

In these deschooling views of the development of education, the future for what we recognize as textbooks is predictable. Textbooks, like other print cultures are expected to vanish into the internet trash compactor. In the words of Jason Epstein, traditional publishing like textbooks will be an abandoned technology, “irrelevant to an electronic future”. Abrahams (2001) summarises this view in the following way “ teachers, books, schools, even classrooms will hardly be needed.”
Similar views though popular, especially with politicians, are at odds with the evidence base of research. Like the collapse of the technology bubble in the economy, the old education, like the old economy has proved and is proving to be remarkably resilient.

Furthermore, not one of the innumerable studies on the effect of new learning technologies on student performance has found gains in student achievement accrues to new technology use.

Textbooks Provide for a Range of Teaching and Learning Needs

The research presented in this paper supports a radically different view of the introduction of the internet, ICT and flexible delivery.

Teachers, students, and schools use and have used textbooks in their teaching and learning over the last 400 years for a number of reasons

- as sources of information
- as sources of tasks and activities
- as interpretations of the curriculum and its outcomes
- as representations and reflections of the subject matter
- as a portable and relatively cheap learning tool
- as a guide to the appropriate pedagogy in teaching and learning
- as a source for the guided construction of meaning
- as a way of multiple entry point to information
- as a source of guidance on the quantity of information to be learned

As the article on the Secret Gardens of Classrooms and Textbooks (Horsley and Lambert 2001) has shown, textbooks and their use change - reflecting developments in curriculum, subject knowledge, knowledge about learning and production technologies. Over the years both the way that textbooks are written, constructed, designed and used to support teaching and learning have varied enormously. When the focus of the curriculum was primarily the identification of what was considered to be worthwhile content, the textbook framed the basis of the structure of study. The emphasis was one ‘delivering’ the material to be learned. Changes in how the curriculum is understood, and developments in the study of learning (leading to ‘constructivist’ views of learning), require that resources are used to make meaning. The constructivist classroom is less subject or teacher centred and does not depend on a single information source. Current socio-cultural views of learning emphasise the creation of shared understandings, cognitive scaffolding, guided construction of knowledge and building on prior knowledge. (Horsley and Lambert 2001)

In each age the features of textbooks evolve. They reflect, reinforce and guide the educational trends occurring at that time. Textbooks from the early 1800’s are extremely puzzling to current teachers. Such textbooks contain a range of subjects in the one volume, with a wide range of content proceeding from introductory concepts to the most advanced knowledge
then available. These texts reflected the multi age, ungrouped, reading approach to teaching and learning at that period in history. These textbooks are hardly recognized as textbooks today.

Currently textbooks have evolved to the point where text (by which is meant extended prose) has ‘disappeared’ from textbooks. Textbook use has changed so that texts are increasingly designed as pedagogical devices to help readers generate meaning, often being mediated by the teacher. Such textbooks actually may have limited ‘explanatory potential’. “This trend, observed in classrooms, gives rise to some fairly basic questions about the role of the textbook in learning and how its place is perceived in relation to supporting the teacher and learner.” (Horsley and Lambert 2001)

This paper examines how textbooks will possibly be authored and designed in the future. How will texts be used in the internet age? What text features are likely to evolve? Are the text design features of the future emergent now? The question is not can textbooks survive the online information age, but how they will survive this information age?

**Textbooks in the Ecotone**

One way to approach researching the future role of textbooks is to identify useful theoretical models of change, evolution and transformation. The simplistic views expressed in the OECD’s scenario 5 are not reflected in the preliminary research conducted on the use of textbooks in web delivered learning environments. In such environments it was assumed that textbook resources would be irrelevant. Such views reflected faulty theoretical models about learning environments and their evolution. New theoretical models need to be explored. After all, we don’t throw away landline telephones just because mobiles were invented and are more portable.

Biologists use the term ‘ecotone’ to describe an area where two adjacent ecosystems overlap – for example where a forest gradually turns into a grassland. The ecotone has an ecology of its own. It can support forms of life not found in either of the adjacent systems. Today there exists the educational equivalent of an ecotone between traditional learning environments and the emergence of new learning environments designed around student centred interaction with the internet and technology based learning tools. A range of researchers have argued that “new technologies will foster a shift in teaching learning towards… constructivist approaches. From approaches transferring facts, skills and basic concepts through a structured deductive approach … to a constructivist approach where teachers are facilitators and collaborators in a learning process through which knowledge is constructed. The old and new paradigm diagram shown below illustrates this teaching and learning environmental ‘biome’ distinction.
Traditional Approaches to Instruction | The New Paradigm
--- | ---
Teacher-directed | Learner-centred
Didactic teaching | Student exploration
Short blocks of instruction on a single subject | Extended blocks of multidisciplinary instruction
Passive or one-way modes of instruction | Active and interactive modes of instruction
Individual, competitive work | Collaborative, cooperative work
Teacher as a knowledge dispenser | Teachers as a facilitator or guide
Ability grouping | Heterogeneous grouping
Assessment of knowledge, specific skills | Performance-based assessment

Furthermore, as Sharpe and others have identified – the interactive, user centred and open structure of the new technologies are believed to be ideal for the creation of constructivist learning environments. This conception has been put forward so often that it has become an unexceptional orthodoxy. This view, as practical web designers and deliverers often suggest confuses the delivery platform with educational objectives. (McCrae 2001)

However, as Jason Epstein has pointed out “new technologies do not erase the past, but build on it.” Changes in any environment occur through an ecotone, an environment which supports different types of educational ecology. In addition, even though new technologies create their own infrastructure and practice, it has been discovered that e-commerce is not immune to the costs and rules of the old economy. Similarly e-education and online learning will not be immune to the basic questions that influence today’s schools and classrooms – What is the role of the teacher? What is the role of the learner? How can the instructional delivery be designed to meet the learners needs? How can information be provided for learning? How can the subject and its information be represented in the teaching and the design of the tasks that the learners must complete?

Biologists have also developed other principles about the operation of ecotones –

- Change is gradual and continuous from one environment to another (dive into the ocean and the light gradually fades the deeper you go). These gradual environmental changes determine the distribution and abundance of species that change in a more or less continuous fashion as the environment changes.

- Ecotones, where the changes between environments are occurring, are species rich because they support individuals from both community types In ecotones species may exist at the limit of their niche.
CHAPTER 7 Embedding Information Technology in Teaching

Many studies of computer use in schools and classrooms confirm these patterns, some subjects in a secondary school will use technology more successfully and frequently than others – and the same difference will persist across school systems. Many studies tend to divide schools into technology rich or regular schools, or technology advanced and non-technology schools. Despite the huge amounts spent by governments and communities in equipping schools with technology, changes have been gradual and spasmodic, reflecting a ragged borderline of adoption, use and implementation. Schools often offer both learning environments – sometimes even within the same classroom.

The ecotone concept is a powerful model for analysing the impact of technological change on learning environments and the provision of teaching and learning resources like textbooks as learning environments change. Textbooks, teachers and classrooms are one mode of learning that students and teachers are familiar and comfortable with. To use an internet analogy, the traditional classroom and its textbooks represent one delivery platform, a learning environmental format. Web delivered online learning environments are another significantly contrasting learning delivery platform. But are the students comfortable and familiar with this learning environment? and how will it answer the major educational questions learning invokes?

**The role of pedagogical content knowledge in learning delivery**

Artists tell us that form and content are not fully divisible. A textbook's design and the information it presents interact in the medium of its pedagogical design. Shulman (1986) in a Seminal Approach to Teaching and Learning suggested that teachers develop pedagogical content knowledge. This is specialised knowledge that teachers use to interpret the students' prior learning, the concepts that students will find difficult, the most appropriate teaching strategies and the resources most useful in teaching. Pedagogical content knowledge arises from the teachers' need to represent and teach their subject to children. This knowledge consists of three components: knowledge of the subject matter, knowledge about students and their characteristics and the school, community and classroom context where the learning takes place. Pedagogical content knowledge embodies, invokes and focuses on ‘those aspects of the subject that are most germane to its teachability’ (Shulman 1987). This knowledge includes the most regularly taught topics, the most useful forms of representation, most successful analogies, demonstrations, examples and illustrations, and the ways of making the subject familiar and understandable to others (the students). (Horsley and Lambert 2001)

Currently that design is based around the school site, engaging learners in classrooms with teachers. Currently textbooks scaffold major concepts and develop students' schema, activate prior learning and assist students to construct and develop meaning in the subject under study. As a result, modern textbooks represent pedagogical explorations of the subject matter in the curriculum. A current mathematical textbook, for example, contains clearly expressed outcomes, explanations, worked examples, problems, schematic maps, quizzes, pre and warm up activities and links between students' experiences and subject matter. Such texts are supported by teachers' workbooks, pedagogic approaches, websites and extension activities
for diverse student abilities and interests. Despite these many features, textbooks are still developed for an ‘average’ student based on the experience of the authors in the knowledge of the students that they are preparing the text for, or the results of trialling of the textbooks in classrooms during the textbook’s development.

One of the benefits claimed for online learning design is that online learning environments can be customized to meet the precise learning needs of individual students. It is widely believed that the power of internet interactive technology will allow information, tasks and activities to be presented directly at the zone of proximal development (in Vygotskyian terms) to individual students.

Research is showing that online web delivery does not really function in this way. Research is showing that web delivered education is based on its own teacherly descriptions (or pedagogical content knowledge) of the topics and tasks, illustrations and demonstrations and information that the web designers choose to incorporate in the web delivered learning environment. Once the site has been developed however, and the educational decisions made, the web designed and delivered learning environment is as fixed as a textbook and can not easily respond to learning needs to the new individual learners not incorporated in the original pedagogic content design.

**Studying Textbooks in Technology Classrooms**

The study of the use of textbooks in online learning environments is an emergent area of research. This paper will use five data sources. It will report the results of three pilot studies (1) which were conducted to examine the changing role of teachers and students as school topics and programs were delivered over the internet. This delivery was conducted via an online site designed around the schools teaching and learning program. This research examined how teachers and students perceived new teaching and learning roles - as the students used internet programs in regular school classrooms with the teacher present assisting the students rather than structuring and teaching the lesson subject matter.

The paper will also draw on the reflections and reflective account of the author as

- a learning consultant to worldschool.com, a new online homework study provider
- a developer of online courses for Masters degrees and teacher professional development
- a private professional web designer of sites for school students to access recent information and articles in preparation for exit school examinations Higher School Certificate (NSW) and Victorian Certificate of Education (Victoria)
- a member of the SMILL research and development team at the University of Sydney
- a developer of designed sites to put school lessons, programs and teaching and learning activities on the web for delivery in schools.
- regular internet columnist and journalist for the Scholastic Classroom magazine
- web designer for an online History teacher development project in NSW
The paper will present data on a homework study (2) completed for the development of the *worldschool.com website*. In addition the paper will present data from analyses of teacher designed websites (3) and studies into the classroom use of technology by teachers (4).

**1. The Three Pilot Studies**

Most research and development, and even provision in online ICT learning proceeds in the following way

- Agencies external to the school develop online learning environments
- The online learning environments are rich and incorporate advanced instructional design
- The environments require considerable investment, resourcing and support
- The effect of the learning environments on students is examined and researched.

Usually these sites fall into disuse after a short research and marketing interlude as they are not based around the pedagogic content knowledge of teachers in the school system or the needs of learners (see Hall 2000).

However, in the three pilot studies, lessons from actual schools programs, reflecting the schools and teachers pedagogical content knowledge and the appropriate mandated curriculum were developed into an online learning environment to be offered;

- Within the schools existing technology resources
- Using the schools existing program
- With the class teacher present
- With the class teacher adopting a different teaching role and style.

The schools programs were designed to meet the diverse needs of their students and resource their teaching by procuring new resources and reusing existing resources. Most internet or online course offerings have not been based on the programs and lessons that teachers teach in their schools. The online learning environment developed and researched was school driven and supported and was designed originally to explore the teachers classroom role in detail. The sites were developed by the schools and the researcher using a constructivist approach.

This Constructivist approach to the design of instructional materials was based on

- Learners required to engage with the materials
- Learners expected to analyse, synthesise, summarise, describe, and solve problems
- Learners interacting with experts through discussion and chat rooms
- Learners invited to explore and discover an environment, sometime with guidance
- Learners expected to build up own hypothesis, categories through study of examples and reflection on own experience
- Learners moved back and forward between symbolic representation of phenomena and the real life referent.
The internet seemed a likely and useful tool to construct such learning environments – because they are open ended, interactive and user centred, featuring problem solving, collaboration and the application of skills emphasised in the site design. The site followed the learning site design identified by Sharpe (2000) who describes the design of almost all e-education as involving the provision of the following student activities

- students select units, read text, follow hyperlinks and complete activities or tests
- students undertake research using themes or keywords
- students analyse data and access a range of sites
- email discussion are initiated and held with external experts, teachers, other students
- data from various sources is explored and integrated

The online learning environments were designed to stand alone. A special activities booklet was prepared for the students to complete. This activities booklet was also designed to maintain a record of the students online activity. The sites were not designed to be used in conjunction with other information sources such as textbooks.

However, during the course of the students and teachers use of the websites and designed learning environments (in the lessons), textbooks and other information sources were used by the students. The students and teachers operated in the ecotone between information needs and pedagogy implied in the online learning environment.

Current textbooks reflect the interaction between information and pedagogy. The online learning environment also reflects an interaction between information and (online) pedagogy. At the center of the online learning environment is a range of activities and tasks that require the students to engage and interact with information presented in the website. The traditional classroom, teacher structuring and textbook use represent one learning environment and the designed website a vastly different one. For the students and teachers however, the online environment represents an ecotone. The students are used to teacher structuring of lessons and the use of traditional information sources like textbooks. They are used to the familiar mode of learning delivery. New learning environments will be approached by teachers and students, with prior learning based on existing teaching and learning modes.

The web delivered site in the pilot studies were designed around a series of student activities (completed online and in the paper activity booklet) to be completed after student were directed to a range of online information sources. Textbooks were used in the following ways in these online lessons

- Students used discussion rooms and chat lines to collaborate and share information, and to interact with experts. In many cases students were directed to textbooks for supplementary reading and explanations by their online expert partners
- Students often found online information sources too difficult to read or to long and extensive. In quite a number of online lessons, students used textbooks as information sources, to read explanations of topics and concepts that they found it difficult to understand using online sources.
In some of the online lessons, students used the worked examples, or sample problems and tasks in textbooks to guide them and assist them in completing online tasks.

The perceptions of the students and teachers about online learning included:

- Entire units should not be based on using the internet and other teaching methodologies need to be incorporated. For example, internet work could be set as a project or homework to increase the amount of teacher to student interaction in the classroom.

- In online environments learning was very task oriented. Some students did not find the internet a useful learning tool but most students found the internet a fun, different and useful learning tool.

- On-line learning reduced the amount of student/teacher interaction. Students asked more questions relating to the task rather than the subject matter. For teachers, online learning environments, are similar to appearing in a quiz show, they are bombarded by questions from students who are completing different tasks at one time. Teachers lose a sense of student progress, as a result learning on-line needs to be combined with other teaching and learning methodologies.

In the words of the teachers:

*Teaching this way keeps you sharp and on the ball, synthesising requires some relinquishing of teacher control, you are dealing with students questions, responding to their questions all the time and from different topic and content areas and at different levels. Students started making the links themselves “this therefore means that” i.e. It wasn’t me doing all the synthesising. Some students are much better than the others in doing this synthesising — this came out in reflection. Some need to be directed to alternative sources of readable information. Surface and depth learning needs to be reconceptualising, students made meaning but not necessarily at the depth and level of the syllabus outcomes.*

Two textbook use effects were identified in the pilot research, the **glossary effect and the explanation effect**. For many students, reading online sources presents a number of difficulties; major difficulties being the presence of unfamiliar terms and vocabulary and the advanced level of the texts. Online sources of information assume that students can read them at an independent level. For students needing to extract and process information from online sources, glossaries and simple descriptions of important concepts are necessary. Textbooks were used basically as a glossary. Since many students were unable to read online sources at even an instructional level, textbooks were used for their definitions and explanations to assist reading at a guided level. The designed sites had access to glossary material but textbook material is more likely to be aimed at the level of the students and provide support at the level of guided reading.
Students had no way to see the size of a chunk of information “we click forever” is a common
response by students in evaluating online learning environments. Textbooks easily provide
the size of the chunk, the iron law of web learning is the need for speed, the number of clicks
can not give a student the size of the information chunk required.

One of the advantages of online learning environments is the ability to use discussion and
chat rooms to link students with other students and teachers, to develop the shared
understandings at the core of learning. The communication lane of the internet can link subject
experts and teachers to students, whose own questions can form the basis of communication
and discussion. In the discussion boards and chat rooms of the pilot studies traditional textbooks
were used as sources of support explanations by teachers and experts alerting students to
sources of information. Everything may be on the web, it may be instantly available, it may be
prepared by subject experts, it may contain different representation and points of view, *but
not in the form that students can understand. Textbooks were used as information sources for explanation, that could be found comfortably and confidently.* The is no simple way
that students can inspect the quantity and depth of information on the internet on any given
topic, question or concept. In the Need for Speed, a online textbook on the design of websites,
Epstein (2002) argues that information should only be four clicks away. Developing a non
expert overall conception of the size, relevance and depth of knowledge required is provided
much more easily through the pedagogic design of textbooks.

**Both of these uses of textbooks were unanticipated and unexpected in the pilot studies.**

2. WorldSchool. Homework Study

**Worldschool.com** commenced operation as a homework study site in 1999 and listed on the
stock exchange in 2000 in Australia. **Worldschool.com** undertook a number of homework
studies during its development phase. In one study teachers in five schools were asked to set
two homework tasks. Prior to the completion of each task a questionnaire was administered
to the students to measure their perception of the task (how long will it take, what resources
do you think you will use, who do you think will help you etc). After the homework task was
completed students were administered the same questionnaire measuring their actual
completion of the task. (how long did it take? What resources did you use? Who did help you?). This procedure was repeated for two different homework tasks. For the second
homework task the students were able to use the **worldschool.com** site to assist in completing
the homework task.

The study examined:

- the times students perceived and then took to complete homework task 1 and then task 2
- the sessions and chunks that student perceived and then took to complete homework task 1 and then task 2
- the location that the students perceived and then completed the homework tasks in
- the information students perceived they would use and then used in homework task completion
The **worldschool.com** study made many startling findings in relation to homework.

One of the most important findings reflected student perceptions about the resources that they perceived they would use to complete homework tasks 1 and 2 and actual sources they used.

Students tended to overestimate the use of reference books and encyclopedias as information sources in the completion of both homework tasks. They tended to slightly underestimate the use of school textbooks for task 1 and also underestimate the use of "other resources" that may have been specially used to complete this specific homework task. A significant variation in the results was that 41% (task 1) and 52% (task 2) of students expected to use the resources of the internet such as worldschool.com to complete their homework. However, much smaller proportions (25% task 1 and 19% task 2) actually did so.

As well, unlike other aspects of homework (time of completion, performance on tasks etc) students reported on in the **worldschool** study there is a large and clear mismatch between the help students expected to receive in completing their homework and the actual assistance they received. Student expected that they would receive help with homework from a variety of sources but rarely received it. These results are startling in the context, the context of the provision of a professional homework study site based on providing students with homework help (the **worldschool** site anticipated student homework and study questions and designed carefully constructed assistance with the anticipated tasks).

These results reflect the ecotone concept. When asked why they hadn’t used the website to assist with homework students offered comments such as

- “the writing in the website was too hard”
- “needed teacher to explain the concepts, and how to answer the question”
- “prefer discussion of the problem than using the computer”
- “it was difficult to learn from the internet for many reasons”
- “the library sucks - it doesn’t have enough machines”
- “not used to doing homework like this”
- “we were supposed to look at a site to answer but the the site had changed so we couldn’t do the questions;”
- “i printed out the site but then it didn’t answer the question”
- “why can’t we use chat”

- the assistance students perceived they would receive and then received in homework task completion
- the student perception of their performance in the homework tasks and their actual performance

The **worldschool.com** study made many startling findings in relation to homework.
Students in the worldschool.com still used the site, but in their use of textbooks, they used as a glossary and as a source of explanation and information, and in the homework study they used the textbook as a source of worked examples and solutions to problems.

**The role of information in teaching and learning.**

*Sure the Web talks a good game with its sound and video and animation and god awful 3-D interfaces. But lurking beneath all those various bells and whistles is good ol’ text. It doesn’t have the sinus blowing sex appeal of Flash, Shockwave or MP3, but text is the stalwart backbone of Web based content. It rolls up its sleeves and gets the real work done.*

Hecht (2001) in describing how Virtual Geography Texts were needed discussed the usual criticisms of textbooks as sources of out of date information. Geography textbooks have the following problems:

- Geography taught in the learning country should reflect the way the other country sees itself in its entirety to avoid distorted interpretations
- Old stereotypical images have no place in a modern world education framework
- Dated geographical facts and concepts do not attract learners
- The use of modern technology is part and parcel of good teaching methodology
- Learners across the world can be linked through modern technologies and learn from each other directly
- Errors in the geography text on distant countries can and must be corrected easily by foreign experts
- More geography texts and support material should be available worldwide through electronic media.

It is believed that online learning environments can overcome currency of information problems, as the technology allows refreshed, correct information to be easily displayed.

Currency is but one aspect of information needed in teaching and learning.

Availability, relevance, accessibility and the size and amount of information are crucial pedagogic dimensions of information that textbooks have been very efficient and useful in assisting teachers with their pedagogical knowledge. These were the information needs supported by textbooks in the pilot studies.

Gerhard and Wiktorin (2000) argue that the web delivered learning makes another type of information use possible. *Through interactive media, the user is able to communicate according to his own interests and rules and …..plays an active role. This information has been described as (discursive information). This means that virtual information is constantly changing permanently or is even being produced at that moment due to the discourse of the interacting*
users. Good examples for such a discourse are newsgroups, interactive homepages, mailing lists and others. This shows that interactivity is the main characteristic of virtuality, or in other words, interaction is the precondition for virtual pictures: “In order to see some picture in the mirror, there has to be something in front of it” (Esposito 1998:149). Therefore, users themselves generate information through their work on the computer. This use of information occurred regularly in the pilot studies as students used the interactive power of web delivery and design to pursue discursive information.

The pilot studies showed that students used different information sources to support different information needs. These findings are also reported in the studies reported in section 4 below (HSC online Hall 2000 and Brown 2000 and Lyall and McNamara 2000).

3. Analyses of Teacher Designed Websites

The author of this monograph regularly provides courses for teachers on the design of web delivered lessons, programs and learning sites. Usually the starting point for such course is an analysis of the teachers sites currently available over the internet. In analysing teacher websites one approach to classifying and cataloguing websites has been developed by Mark Treadwell (2000 Searching The Worldwide Web).

This educational site classification by their information provision, for example some sites basically provide discursive information such as news and events, others student pedagogic activities, still others collaborative projects or curriculum support. The classification system also gives teachers a good guide to the potential effectiveness and use of websites in their classroom. Units of work, programs and lesson plans provide pedagogical content knowledge. These sites allow teachers to build on the planning of other teachers and compare their pedagogical content knowledge to the teachers who have offered their own lesson plans over the web. The first action of teachers using other teachers websites is to adapt them to their own pedagogical knowledge, to adapt, copy and modify the teachers web sites to meet the learning needs of their own students, knowledge of the subject and their own contexts for teaching and learning.

It normally takes teachers about an hour in a web design class before they start to adapt and shape famous teachers sites (such as Cyndy Ohara’s) using their own pedagogical knowledge for their own students.

4. Australian Studies on Using Technology in the Classroom

Robert Lyall and Suzanne McNamara (2000) argued that educational institutions are turning to computer driven technologies like (WebCT and Blackboard) to reach a wider clientele for their products and in the process are being forced to review and probably change their methods of teaching. However, they cautioned that it’s a well known fact among users of technology in schools that most students do not share institutional management’s view of the computer as a learning tool....
In their study of first year chemistry university students use of online distance education learning environment it was shown that students

- Developed successful learning profiles
- Regarded themselves as independent learners
- Employed both deep and surface learning strategies
- Employed learning strategies based around preparing their own written notes from study material in textbooks, study guides and distance work
- Operated in a zone of comfort with well defined and successful ways of studying using printed material and textbooks

The study showed that the students would have to see immediate improvements in their learning outcomes to change their successful learning strategies and that as a result web delivered courses must follow the learning modes and metaphors that adult students are used to - sequential learning as in a book page by page. In this way adults can use their already established learning strategies to meet the range of information needs that they have. In this context textbooks will support and complement learning in web delivery environments.

Hall (2000) conducted a study into the use of the Geography Higher School Certificate (HSC) online Node. In 1997 a HSC online site was established jointly by the NSW Board of Studies, the NSW DET and Charles Sturt University. The aim of HSC online was to provide HSC students with tutorial material on specific topics, access to reviewed URL’s, information from the Board of Studies and access to a virtual education library. For teachers, the site provided a Professional Teachers Association node and material relevant to the implementation of the new 2001 HSC. Despite its marketing and profile an evaluation study of the Geography node in seven schools revealed that

- There was no teacher led use of the HSC Online node in any schools
- Of 324 Geography teachers surveyed 2/3 had never used HSC online, much less the Geography node
- Of the 124 Geography teachers reporting use of the node only 3.2% reported frequent use (the survey was completed at Geography Inservice courses)
- The greatest reported use of the node is to “print out information for distribution to students, to refer students for their own revision and to locate reference material.
- Teachers are reacting against online support in favour of print or face to face support “print based materials are regarded more favourably”
Brown (2000) surveyed 50 teachers nominated by their schools as proficient in the use of IT in the classroom. The results from research into this subset of teachers included

- Only 40% had access to the internet in their own classrooms
- Few of the teachers reported that they had succeeded in integrating the web into their teaching
- Major use of the internet by the teachers students appears to be email, designing web pages, responding to surveys and virtual field trips, ask the expert and social action surveys, not actually teaching the subject matter (i.e discursive information)
- There is no evidence to suggest that internet activities are replacing traditional mind tool applications but are adding them and offering different learning possibilities

Research in schools with teachers, head teachers and principals typically reveal these findings.

**Conclusion**

Lemonick has asserted that

“There was a time in schools when knowledge came almost exclusively from textbooks and teachers and...from them, students learned what they needed to know. ... That time has passed. There’s been an explosion of information in the world, more information than anyone could help to learn in a lifetime, more than a teacher can teach, so now students need to know where to find that information, how to access it, and how to use it.”

However, like most commentators Lemonick has made a simple error, while the internet, world wide web and modern technology tools have revolutionised knowledge production they have not and probably will not revolutionise knowledge learning.

Even if these technologies become embedded in the learning process, they will not meet the varied information needs of teachers and learners and can not replace the pedagogical content knowledge that is needed to help learners to construct meaning. The research reported in this paper indicates that textbooks will have a role in the online classroom, albeit a new role to meet new information needs of teachers and learners. Online learning will make discursive information possible and vital but will need to be supported and complemented by new textbooks for the new millennium. In reality, the use of online learning will allow teachers to construct ‘hybrid pedagogies’ accessing information across a range of information boundaries. In the ecotone of information for learning, textbooks will still have a major role.
CHAPTER 7 Embedding Information Technology in Teaching

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Cyndy Ohara’s site is at (http://homepage.mac.com/cohora/ext/internethunts.html) site features lots of advice to Macintosh users but ‘Over the years I ended up with an extensive collection of the lessons. Last year several of the teachers urged me to publish them. I decided to use my free personal web site to do so.” Cyndy’s site provides teaching activities for immediate use in classrooms. Of particular use are the Internet learning activities created in the form of scavenger hunts, sites and activities on a wide range of topics. There are hundreds of websites and associated activities organised by topics for teachers and students to use immediately on this site.
PAPER 3

Economics and Business Educators Conference
2004 Sydney

Embedding Technology in Teaching:
The Mercy College Case Study

Sharing our Story
Mike Horsley
Faculty of Education and Social Work
University of Sydney

Collaborative partnership requires commitment by teacher educators and school-based practitioners to develop a program where ‘students are exposed to different forms of educational knowledge, some of which come from the school and some which come from higher education or elsewhere. (John Furlong)

Partnerships are fundamental to schooling for today and tomorrow; they open new learning opportunities and knowledge; they provide critical links between schools and their communities; they broaden the support base on which dynamic schools and teacher professionalism depends. (Yiva Johannson)

During the initiation phase knowledge networks encourage; shared commitment and ownership, leadership at a variety of levels, external facilitation, clear focus on goals and purposes. During the implantation phase in knowledge development networks encourage understanding about learning and the management of change, creativity, social and technical support, and early success and its celebration. (David Hopkins)

Partnership involves political, information, collaborative, self management and regulation, resource and skills functions in a transformational community of practice. (Dalín)
1. The Mercy College Project

The technology partnership, originally planned as a short professional development project has proceeded for almost two years, and has undergone a number of iterations and has included many more participants than originally intended.

Stage 1 Planning and Identification of Needs -
A meeting with the School Principal and staff Mrs. Jenny Allen, Jan Wilson, Jenny Wells and Peter Clifford, Mike Horsley and Jacqui Manuel, from the Faculty of Education and Bronwyn Hession, from the CSO Broken Bay was held to identify possible options for integrating ICT into the English and HSIE Curriculum. A range of options developed by Mike Horsley were further developed by staff from the Mercy College and St. Leos College.

Stage 2 Staff Training -
A number of professional development courses were held in the Faculty of Education and at the school to develop the ability of the staff to design web environments to facilitate the embedding of ICT across the English and HSIE curriculum. Staff included Jenny Wells, Kerry McGonigal, Peter and Jane Houston.

Stage 3 Development of Web based Units of Work -
Peter Clifford with assistance from Matt Palmer (intern from Master of Teaching) developed a web based unit of work for Year 10 Commerce. This unit of work can be found on the projects page of the website.

Stage 4 Development of a Communication and Mentoring Project -
This was designed for year 10 English and Year 12 Economics and Business Studies students at the school. The website for these projects are to be found at http://alex.edfac.usyd.edu.au/Methods/HSIE/mercy_chat.html (Economics and Business) and http://alex.edfac.usyd.edu.au/Methods/HSIE/mercy_chat_english.html (English). It was great to see a distance education student from Fiji join in to the chatline on the internet for assistance with his course.

Stage 5 Presentation of Progress at the Mercy Schools Professional Development Day -
At this professional development opportunity Peter Clifford from Mercy College and Mike Horsley from the Faculty outlined progress that had been made in the development of the partnership. A web site was created for the professional development opportunity. http://alex.edfac.usyd.edu.au/Methods/HSIE/mercy_talk.html

Stage 6 Action Research Presentation -
Peter Clifford developed a powerpoint presentation of his action research project on embedding ICT into a unit of work and reorganising his teaching with year 12. The power point is available online at the following address http://alex.edfac.usyd.edu.au/Methods/HSIE/HTML%20Presentation%20folder/s1d001.htm. Peter has subsequently made a video and digital photos of his year 10 commerce class in action on the web.

Stage 7 Bachelor of Education Year 4 Students Develop web based support units -
As the partnership developed Mercy College provided technology practicum places for two Year 4 Bachelor of Education Students, Ayca Emerali and Edina Pervanic. They developed a website for teaching Globalisation topics and assisted year 12 students in developing power point presentations for Economics Topics and Year 12 Assessment.
CHAPTER 7 Embedding Information Technology in Teaching

Stage 8 *Internship Student Julie Robinson in English* -
Julie Robinson, a second year Master of Teaching Internship Intern joined the English Staff for Term 3 2002 and developed some internet support for a range of English topics.

Stage 9 *An Internet based assessment task* -
An online assessment for the Commerce students who had completed the online course was developed. This was designed to use the internet to test not only their topic knowledge but also the computer and internet skills gained by doing the online course. This task can be viewed here. The assessment is at the bottom of the page. This pilot task involved 45 students simultaneously on computer and internet accessing the 1 hour online task. Their work was then saved onto the school intranet, where it was marked and recorded on computer. The only paper used in the whole exercise was a one page analysis of each students results given to each student. Students then accessed the answers of the best students online to compare to their work.

Stage 10 *Research Tasks* -
A year 7 Geography class researched Tornadoes on the internet and saved the best links into an intranet folder where they found an assignment sheet with instructions. The assessment was designed around producing an information sheet on the topic. Many requested to use powerpoint - the impressive presentations can be seen here. Assignments were emailed to the teacher, marked and returned by email. The best were shown to the class and are to be put on the departments internet site for display. A similar unit has been done on Tsunamis.

Stage 11 *Globalisation Unit Year 11* -
Students recently completed a globalisation on line course and made good use of the chatline with University students to gain assistance.

Stage 12 *Chatline Use Trial HSC Online Help* -
Year 12 students found the chatline very useful for their final preparation for the HSC. They asked questions and received answers from Peter Clifford their teacher, Sydney Uni and other students. The beauty of this was that all students could view each others questions and answers rather than individual assistance by phone or email.

Stage 13 *School technology Audit* -
Under the leadership of Siobhan Betts a technology audit was held to examine KLA use of technology. Departmental websites were developed as a model for consideration by all faculties with assistance from the University.

Stage 14 *Art and Social Science Interns* -
Further development of technology embedded units of work by M. Teach technology interns in art and social science (Sue Brady and Sophie Malak)

Stage 15 *Quality Teacher project* -
Based on Mercy Model applied for CGQTP project accepted and funded an Australian Government Teacher Project application for funding was successful. The project applied this professional learning model for teachers embedding technology into their teaching in their schools in the Diocese.

Stage 16 *Online Commerce Unit selected for new Commerce Curriculum Board of Studies NSW* -
The unit of work developed at Mercy College was used as the basis of a topic in the 2003 Board of Studies New Commerce Syllabus.
CHAPTER 7 Embedding Information Technology in Teaching

2. Evidence Based Project Design for Professional Learning

The project’s professional learning design was based on prior technology oriented professional development experiences by Mike Horsley in research on developing online units of work at Holroyd High School (History), Kingsgrove North High (Economics) and the 22 schools and teachers undertaking technology embedded teaching in the action research based NSW History Project. (http://www.edfac.usyd.edu.au/projects/NSWhistory/)

As a result of this prior action research and action learning it is believed that:

1. There is little use of ICT in actual classroom based teaching;

2. Teachers create new knowledge when they embed ICT into their teaching. This new knowledge is the way teachers must change their pedagogy to incorporate ICT into their teaching. This goes beyond technology skills based professional development.

3. Teachers use their pedagogical content knowledge of their students to interpret and frame any teaching and learning resource – including technology.

4. Technology embedding in the curriculum is framed by the disciplinary practice lens.

5. Teachers will use their PCK to develop or adapt their ICT embedding for the particular needs of their students.

6. Teachers technology embedding will be almost entirely different from a similar skill base.

7. General technology skills training will not be adopted by teachers. Specific technology products developed outside a teacher’s classroom will have limited implementation value.

8. Teachers will need significant and ongoing individual professional development support to embed ICT into their teaching.

9. ICT and non ICT technology teaching and learning materials are not competing and separate learning paradigms, accordingly embedding technology in teaching will require decisions about print based teaching and learning resources.

3. Research on the Professional Learning Needs of Teachers

The project and partnership brief and design were also informed by the results of a large scale survey undertaken on the professional learning needs of staff. The Diocese of Broken Bay undertook a comprehensive professional needs technology survey as part of the 2002 Quality Teacher Program. Under the leadership of Bronwyn Hession, and Glynis Jones, the entire staff of a catholic school district encompassing 36 Primary and 7 Secondary schools was surveyed. The Broken Bay Survey posed a range of questions including:

- How, where and when would teachers like to access their professional development support?

- In what areas do teachers believe they need continued support?
CHAPTER 7 Embedding Information Technology in Teaching

- What emergent technologies or software would teachers like to consider and explore?
- Should the learning outcomes identified within the syllabus documents be the major factors influencing professional development or is the quality of the learning experience itself, and students’ engagement and enjoyment of teaching equally important?

The survey, one of the most comprehensive of its kind, made a range of critical findings about the technology professional development needs of teachers.

1. Nearly half of all respondents expressed an openness and desire to utilize technology in the classroom, although many felt that their opportunities were impaired because of limited access to computers and, in some cases, software.

2. The apparent reluctance of teachers to take on the technology agenda, so often reported in the literature (McRae, 2001), was not apparent in the Broken Bay sample. They generally want to be part of the technology agenda and most are keen to learn more.

3. When it came to identifying the ways in which appropriate professional development might be accessed by staff, there was a clear preference, from both primary and secondary personnel, for directed training sessions using technology.

4. Generally fewer than 20% of respondents identified self-paced programmes, kits using videos and text or online access and the use of CD ROM as their preferred modes of professional development support.

5. A very clear preference for the on-site delivery of professional development support with colleagues from the same school was indicated by 64% of primary respondents and 53% of secondary respondents.

6. One very clear view was that any professional development courses or training undertaken by respondents should be acknowledged in the form of an academic credential. In this particular case, 59% of secondary and 65% of primary respondents agreed very strongly with the statement that any professional development undertaken should be eligible for a new credential.

7. The most frequently identified areas of professional development need include the use of the internet and the sending and receiving of emails, with over 48% of all respondents selecting this as one of their three choices (i.e. first, second or third). In addition, the use of multimedia and power point were also seen by many to be areas in which they needed professional development support.

8. Other identified areas of need included web site design, the use of spreadsheets, educational software and wordprocessing. Some teaching staff believed that their needs lay in the area of classroom management, in the use and application of technology and the integration of technology across the Key Learning Areas (KLA), including the use of CD ROMs and accessing useful web sites.

9. Teachers also wanted to provide interactive lessons for their students and indicated that they would like support in introducing technology into their classes for problem solving. They also mentioned video conferencing, the use of chat lines and online discussion groups as ways of enhancing the quality of the learning environment.
The project used the results of this survey in the way that it approached designing the professional learning at the core of the project; and in planning the shape and structure of the teaching and learning components and action learning and action research.

4. **Project Teacher Professional Learning Design**

The professional design principles adopted for the project were evidence based. They utilized the professional development principles established in meta-evaluations of professional development programs and published by the National Partnership for Excellence and Accountability in Teaching (NPEAT) from the United States. The principles and a comment on their application in the project are noted below.

1. **The Content of professional development (PD) focuses on what students are to learn and how to address the different problems students may have in learning the material.**

   The initial professional development sessions for the staff attending was based, not on theory, but immediate applications of technology to topics currently being taught. In this way the teachers pedagogical context framed the shape and design of the training sessions.

2. **Professional learning development should be based on analysis of the differences between (a) actual student performance and (b) goals and standards for student learning.**

   The initial training sessions were based on activating new curriculum requirements that audit of current technology by the project teachers had revealed. In this way it was explicit that the context of technology innovation would have a direct impact on student learning, and the teaching and learning programs of the participants.

3. **Professional development should be primarily school-based and built into the day-to-day work of teaching.**

   As well as being directed at current topics in teaching, the professional development provided took place in the school. After initial release for sessions outside the workplace, subsequent sessions occurred in the workplace and focused on implementation in the workplace at the teachers schools.

4. **Professional development should be organized around collaborative problem solving.**

   Teachers at the school worked together in developing both process and product for implementation in the classroom. Support from the project's consultant was based on providing assistance in the classroom and in overcoming problems within the school context by providing online and personal support in the school.
5. Professional development should be continuous and on-going, involving follow-up and support for further learning including support from sources external to the school that can provide necessary resources and new perspectives.

Training sessions were organic, they began and concluded with the teachers ongoing development of their technology product and often required originally unplanned assistance. Project support in the school provided ongoing support and resources.

6. Professional development should incorporate evaluation of multiple sources of information on (a) outcomes for students and (b) the instruction and other processes that are involved in implementing the lessons learned through professional development.

Student learning in the technology enriched classroom was examined through survey and observation. Student use of technology in their own learning and communication also provided evidence that outcomes were being achieved.

7. Professional development should provide opportunities to gain an understanding of the theory underlying the knowledge and skills being learned.

As many theories of teacher innovation acknowledge (Hall and Loucks – Concerns Based Model), post innovation teachers ultimately evaluate the meaning of innovations for the benefit of their students and make management conclusions presented to the wider school and participants in the school. Subsequently one project has been chosen by the NSW Board of Studies as an examplar of the use of technology in teaching, and has been included as a component of new curriculum to be implemented in 2005.

8. Professional development should be connected to a comprehensive change process focused on improving student learning.

The focus on student learning in this partnership was strengthened by significant amounts of collaboration by teachers through a range of new personal and communication technology networks.

5. Research Design

The research was conducted in three overlapping research phases.

In phase 1 of the research design reflection, demonstration and collaboration were built into the professional learning experiences undertaken by participants.

As participants developed their embedding technology projects they were encouraged to demonstrate their projects to other participants and teachers and project support staff. In this way, reflection on both the technical and pedagogy design were built into the co-construction of the projects. Each participant acted as a teaching and learning mentor to other participants. Implementation of the projects in the participant’s classroom was based on action learning principles with participants conducting evaluation sessions with students and sharing these student evaluations with other participants. In addition, student evaluation questions were incorporated into website design and the data collected by teachers.
In Phase 2 of the research, a series of focus group interviews were held with the teacher participants after they had completed teaching the topic which had been embedded with technology. The participating staff conducted a focus group responding the questions identified in the box 1 below.

**Box 1 Focus Group Questions**

1. What factors/reasons lead you to join the online project?
2. How have you been changed by participation in it?
3. How would you describe the new skills that you have learnt?
4. How long did it take to actually develop the online lessons/program?
5. How did developing online materials/resources influence your teaching both for this class and more generally?
6. What do you think the students perceptions of the online lessons/program will be?
7. Will you continue to provide online materials in the future for your classes?
8. Describe your future professional learning needs?
9. Has your work had an influence on your peers/colleagues?
10. Rate the support the project personnel provided?

The questions were designed to identify critical factors in the affords and constraints of professional learning undertaken by the participants and to identify critical professional learning success factors that contribute to student learning.

In phase 3 of the research design a student survey to gather student self-perception data was developed. This survey was administered to students who undertook the technology embedded classroom experiences in the teacher participant classrooms. These student surveys were subsequently returned to the teacher participants to assist in their reflection, evidence gathering and future planning. (This data is not included in this paper).
6. Results of Teacher Learning Research

Nine teacher participants responded in the focus group sessions. The results of their responses are outlined:

Seeking Professional Development

Question 1. (What factors/reasons lead you to join the online project?)

The participants expressed an even mix of external and personal reasons for seeking the professional development experience offered by the project. Participants self-nominated to join the project after being offered the opportunity for involvement.

Most participants were motivated by dual reasons. External motivations related to the encouragement given by the Catholic School Office and its personnel for involvement and for the possibility of joining the wider information technology teaching movement.

A cluster of personal motivations included motivations such as enhancing skills in IT and the wider possibilities of enhancing participants teaching repertoire, developing more interactive classrooms and satisfying curiosity as to how the incorporate technology in teaching. Keeping up with student learning was also a nominated motivation.

Teacher Comment

Experiences that were new e.g. more interactive and less classroom based teachers.

*Cultured into it. Agenda item. Bombarded with IT. Where are we going? Saw opportunity to learn more and up-skill. Change in role of teacher.*

Personal Change through Participation

Question 2. (How have you been changed by participation in it?)

Participants were asked how participation in the project led to personal change. Their responses indicate that the professional learning model adopted had powerful personal impacts on them. The model adopted had empowered them to develop their own learning. They expressed the highest degree of engagement in professional learning and had come to own their own learning and gauge its impact in their classrooms. They expressed new energy in their approach to the teaching and learning process; they expressed they had changed their pedagogical skill set. Responses like new horizons, empowerment and amazement reflected the change. Participants linked the individualized professional learning delivery model to their own opportunity to individualise and differentiate their own planning for student learning.
Teacher Comments

*Kids are changed. Therefore I am changed as result. Therefore want to adapt more.*

*Amazed at my new learning. Expertise increased. Gone down a new path. I look for other opportunities. Also allows to differentiate curriculum. My teaching and learning strategies have expanded. Larger repertoire of tools, e.g. tool is available to differentiate.*

New Skills Learnt

**Question 3 (How would you describe the new skills that you have learnt?)**

Teacher participants reported seeing two new skill clusters. Approximately half the teachers made references to new technology skills such as making webquests and a range of other associated technology skills. The other half of the comments however reflect new skills in conceptualizing teaching and learning.

As expected, several of the comments relate to the potential of the medium, pedagogical skills and different ways of configuring teaching and learning; and in more critical evaluation other technology applications in teaching and learning. The participant’s students were reported as responding to the new technology and enhancing their skills. Participants reported a critical skill as opening and sharing a discussion of teaching and learning with other staff. They also reported that their student’s ownership of the new learning has resulted in their changing their own role.

Another new skill reported reflects the sharing and transfer of resources and skills to other colleagues and schools using new technologies – an osmosis model enhanced by technology.

Teacher comments

*Better evaluate websites. More critical with material presentation.*

*Can do webpages now. Publish on the web. From chalk and talk to more self-directed activities.*

*Know how to make webquest. Same skills as students. No idea before, now I can create/jump on bandwagon (students can do more things in ICT and I can link this in) Executing new possibilities.*


*Sharing topic programs and resources. Opening up horizons – made it more accessible to everyone.*

Investing in Development

**Question 4 (How long did it take to actually develop the online lessons/program)**

Management finds it easy to underestimate the amount of time required to develop new IT skills because the associated teaching and learning skills also need to be considered. The associated pedagogical changes new delivery system simply is unknown to management.
The project design brief for professional learning allocated 3-5 days of day relief for project development. Teachers report that three times this allowance is needed to develop the first project as completing the initial task takes longer due to unfamiliarity, activating a new IT skill set and trial and error. Many participants used holidays and weekends to allocate personal time for project completion. Subsequent projects required much less time.

**Teacher Comments**

*Early everything was difficult, e.g. trial and error.*

*A lot of work.*

*Faster now as we have accumulated resources.*

*Maybe a week and 3 days then I added to it.*

*3 times the allocated time to complete.*

*During holidays.*

*Working booklet that students wrote.*

*Now only 2 or 3 hours (depends on the length of lessons).*

**Implementation, Sharing, Dissemination, Transfer**

**Question 5 (How did developing online materials/resources influence your teaching both for this class and more generally?)**

Responses to transfer and disseminate are powerful testimony to the success of the professional learning:

- 2 teachers shared the webquests they developed.

- A whole (Year 7) used the webquest prepared by one teacher.

- Two teachers shared their resources with other schools, with teachers teaching the same subject

- 4 of the projects were uploaded to the entire Catholic School System’s CASTnet, an information management system.

- A whole form (Year 8) used one of the webquests developed.

Although the original investment was heavy in developing the webquests, the new resources created were widely applied. Development of symbiotic relationship with the teachers and the students and the design of teaching and learning. Since the project ended, teachers take on board self-directed learning and continue to develop their original and new projects.

They are attempting this approach with other classes in the development of new projects.
Teacher Comments

My ownership then was shared with the kids who then developed ownership. All this has carried over to other classes. Continue to develop web quest. Makes you plan independent self-directed learning.

Teachers’ Perceptions of Students’ Perceptions of their Learning

Question 6 (What do you think the students' perceptions of the online lessons/program will be?)

Teachers’ perceptions include the following.

Students will be honest/teachers have valued feedback previously and are moving towards a more evidence based approach, responding to student feedback.

Teachers are predicting students will identify the quantity of reading as excessive.

Teachers perceive the new delivery platform will require:

- more student self-directed learning;
- increased effort and work by students.

Teachers perceive that students will report this.

Teachers perceive that the change in the independent learning load will influence student responses. Teachers perceive that students will appreciate the fact that the new teaching and learning delivery will reduce competition in the classroom and encourage more sharing and cooperation. Teachers perceive a predictability of student response.

Teacher Comments

I think they will enjoy it and say that they like it.

Some engaged doing it but they would much rather we teach. The group has to work harder.

Kids will be brutally honest?70% of class terrified of online access and using skills.

Too much reading. Do we have to do all of it? Can we do a la carte? Boring after awhile.

Depends on class, e.g. yeah it was fun for some classes. Other classes – reflect the context. Maybe it might reflect their ability to handle independent learning.
CHAPTER 7 Embedding Information Technology in Teaching

Continuity

Question 7 (Will you continue to provide online materials in the future for your classes?)

All teachers report that they will embed technologies in their future teaching. One way of doing this noted by a number of teachers is to share ownership of the technologies in the joint construction of new resources with children. There is a perception that even though teachers must invest their own time heavily in preparing the resources, ultimately sharing ownership and encouraging students to co-construct will save significant time.

Teachers report that they can’t work at this capacity/level for more than a term but need downtime for reflection and recharging before embedding technologies in “a new topic”.

Teacher Comments

Recovery mode.

Definitely a future but need to harness student energies.

Transfer my skills to kids to develop websites together.

Future Professional Learning Needs

Question 8 (Describe your future professional learning needs?)

Four teachers nominated new technology skills as their future professional learning needs.

Three teachers nominate teaching release/time for a range of strategies and tasks such as:

- refreshing/update knowledge of the software;
- maintaining skill level
- sharing resources;
- co-learning with others embedding technology;
- deconstructing syllabus outcomes to use technology appropriately.

Teachers have contributed significant proportion of their own time and as a result value time made available for continued professional learning.

Maintenance of skills.

Follow up in 6 months (1/2/day/day review and refresh)

Sharing new ideas and getting support.
Influence

Question 9 (Has your work had an influence on your peers/colleagues?)

9 teachers embedded technology into their teaching.

- For two teachers their projects were shared and used with another school and that school's teachers and classes. (4 classes).
- Eight other classes used the webquests created by the other teachers in the project within one term of their development.
- Significant amount transfer, uptake and influence of the resources developed.
- Two of the teachers presented workshops on the design of webquests to the entire school staff and conducted a workshop.
- Two staff meetings of departmental staff were conducted on the projects created by teachers from these departments.
- 4 of the projects were loaded onto CASTnet which is the learning management platform for the entire school system in the Diocese.

Difficult to short circuit the need for collaborative, reflection processes and support for skills learning and development.

Teacher Comments

Yes, in our department and with the other schools from Year 12 down to Year 7-10.

Sharing CD burnt and send down to other school.

2 other teachers used project - allocated time at science meeting.

Request for sharing webquest time in staff meeting.

"There’s something in it for me" - application beyond projects.

Encouraged/inviting others/succeed in difficult topic has helped others

All of Year 7 have used AH's site.

It's actually cutting our workload.

Playtime is important.

Other religion classes used religion webquest.
CHAPTER 7 Embedding Information Technology in Teaching

Rating the Project

Question 10 (Rate the support the project personnel provided?)

The project was rated very highly by participants. The group itself had a very positive dynamic and strongly supported each other's learning.

Individual support was provided and the availability of support was effective. The scaffold the project provided was essential to encourage professional growth. Participants reported that their personal work enhanced and many spin-offs from the project had occurred.

Teacher Comments

*Peer pressure was wonderful - most applied their own pressure.*

*You can't measure the spin-offs.*

*I bought a digital camera.*

*Developed prac based on using the photographs - Prac manual CD.*

*Personal work has been enhanced.*

Conclusion

The model of the professional learning experience for this project had contained a number of key features including acknowledgement of the needs of each learner, access to expertise, support for each person's learning, safety in taking risks, that there was safety in the community of practice that was built up and that the learning experience would embrace effective pedagogy. There was an emphasis on the co-construction of knowledge with guided collaboration.

A key outcome of the teacher focus groups teachers was the capacity of teachers to articulate clearly the impact of their participation in the project on their approaches to teaching and in particular on their teaching repertoire

- Forces you to accept the student as independent learner.
- From chalk and talk to more self-directed activities.
- Kids are changed. Therefore I am changed as result. Therefore want to adapt more.
- Didn't know - horizon has changed.

As a result of this learning experience, teachers have had to reflect on what it is to be as teacher in an environment which uses technology as the vehicle through which learning is accessed. In effect, the challenge is to create a new pedagogy, a finding consistent with other research (Downes, 2004, Spender, 2001, Cuttance, 2001). This new pedagogy goes far beyond a minor modification of one's teaching practice. Cuttance describes the introduction of technology into school learning environments as having first and second order effects. First order effects refer to outcomes such as improved learning and stronger motivation and second order effects arise because the introduction of Information Technology creates new contexts and environments for practice (Cuttance, 2001).
The project demonstrates the transition towards the second order effects as described by Cuttance. A new pedagogy is emerging for these teachers:

- Opened new doors.
- Opens up other opportunities - reframing.
- Forces you to play differently (i.e. more thought out)
- Expertise increased. Gone down a new path.

At the same time, teachers see themselves as co learners with their colleagues and students - recognising that the mode through which one learns merges and changes the relationship somewhat towards a community of learners with the sharing of expertise:

- Peer pressure was wonderful - most applied their own pressure.
- Allowed more in depth work. Increased quality of teaching.
- Executing new possibilities.

For the teachers who participated in this project it was the first time they had really embraced technology in their teaching and part of the agenda for them was being able to respond to a number of questions "How do we find out how things are going?' and "How can we refine what we are doing?" and "How do we evaluate what we are doing?"

One of the critical contributors to this dialogue was the sharing of another teacher's story - someone who could provide personal experiences and insights of his own journey with ICT in the secondary school classroom. This approach was built into the project at commencement and Peter Clifford was able to demonstrate aspects of his own learning as well as exemplars of what had developed for classrooms. Project teachers followed this model, which encouraged the teachers to share their own journeys.

The whole area of research, the need for evidence and the time for reflection was built into the project. For some participants this was at times challenging. In one particular instance, for example, students involved in one unit of work were not going online. Why not?

All of the online projects had evaluations built into them in terms of seeking student feedback and this too was used by teachers to help inform and analyse how their unit of work was being received by students. This analysis was also used by the whole group to inform their discussion and learning. Teachers developed a meta language to explore their learning with each other. In reality the process was one of reflection in action:

- Better evaluate websites.
- More critical with material presentation
- No idea before, now I can create/jump on bandwagon (students can do more things in ICT and I can link this in)
- Makes you plan independent self-directed learning.
In the broadest sense, online learning could be any technology intervention, which assisted students to improve their learning. Therefore, knowledge management, intranets, practice environments and webquests all fall into the category. Essentially, one has to ask oneself, "How can we use technology to help people perform their best?"

Teachers soon realised that using technology in the classroom resulted in a changed learning environment for students and a changing role for themselves as teachers. In fact, access to technology creates a new pedagogy which is characterised by the increased autonomy of the learner, the availability of choice, access to a variety of media and increased engagement of the learner.

- Change in role of teacher.
- Kids are changed. Therefore I am changed as result. Therefore want to adapt more.
- Changed more towards technology in teaching.

Learning becomes more interactive and differentiation occurs more easily to ensure that every student is operating at their optimum.

- Experiences that were new e.g. more interactive and less classroom based teachers.
- Allows me to differentiate curriculum.
- My teaching and learning strategies have expanded.
- Larger repertoire of tools, e.g. tool is available to differentiate

As well, the students also acknowledged, in their responses, that they were able to work at their own pace and were more independent as learners. They were also of the view that they received more help from their teachers than in a face to face classroom although this was probably more to do with the fact that the learning environment itself was less teacher centric and more student centred.

- I could work at my own pace, no distractions
- Freedom to access many opinions
- Easy to work by yourself
- I could work faster than people in my class

The learning process of the teachers who participated in this project could best be described as organic. The learning evolved in a climate of trust and support with ongoing communication being achieved as a community of practice both online, in face to face sessions and through sharing of ideas and experiences.
This process, however, does not occur overnight. It requires time and connection with the learning process and trust that risk taking is an acceptable part of the learning process and an essential part of professional growth. There is no quick fix to the technology challenge in schools. Teachers are the key to the changing pedagogy required of a technology rich learning environment and it is their learning alongside that of their students which is a powerful enabler and facilitator of change. The teachers who have engaged so fearlessly in this project from such a modest starting point are to be congratulated for their professionalism, commitment to their own and each others' learning and that of their students.

The outcomes of their on going commitment to their own learning, is borne out in the voices of their students. A powerful advocacy for technology enriched learning experiences where learning is able to be differentiated and students themselves become knowledge makers.

The project also suggests a way forward for the diocesan schools system in shaping its role in supporting teachers in the use of technology in teaching and learning:

- the mode of professional learning is critical to the successful adoption of learning technologies
- teachers invest a significant amount of time, particularly in the early stages of adoption and experimentation, in conceiving, designing, and trialling online content
- it is the technology driven change in pedagogy that is at the heart of professional practice, not merely the mastery of technical skills or the availability of hardware or learning systems
- ongoing research, action learning, critical reflection and data gathering about the teaching and the learning will ensure that resource allocation targets relevant needs and yields rich outcomes for both teachers and students.
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Chapter 8

Publications of Horsley, M.
CHAPTER 8
Publications of Horsley, M.

2004

Submitted for Publication to Journals


Refereed Conference Papers


Book Chapter


Book Chapter in Press

Textbooks


Teacher Professional Development Conferences


2003

Refereed Journal Articles


Refereed Conference Papers


Published Department of Education and Training (DEST) Funded Research Reports


**Curriculum Materials Published**


Online Curriculum Resources in Nutrition, Economics, Legal Studies, Business Studies and Geography. March, April, July, August published by Educational Assistance: Melbourne


**Teacher Professional Development Conferences**


2001

Book Chapters


Refereed Conference Presentations


**Teacher Conference Presentations**


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**2000**

**Textbook**


**Book Chapter**


**Teacher Conference Presentations**


Commissioned Articles in the Australian Newspaper


Webdate Online Journal


1999

Textbook


Journal Articles

Refereed Conference Papers


Virtual School


Articles in Australian Bookseller and Publisher


Commissioned Articles in the Australian Newspaper


Ecodate Articles


Webdate Online Journal


Commissioned Research Reports for Worldschool.com


1998

Book


Teacher Presentation


1997

Book


Refereed Conference Papers


1996

Books


Refereed Conference Papers


1995

Research Monographs


Books


Refereed Journal Articles


Refereed Conference Papers


1994

Book


Refereed Conference Papers


1993

**Book Chapters**


**Refereed Conference Papers**


1992

Refereed Journal Articles


Refereed Conference Papers


1991

Books


Book Chapters


Referred Journal Articles


CHAPTER 8 Publications of Horsley, M.

Research Report


Refereed Conference Papers


Books


Refereed Conference Papers


CHAPTER 8 Publications of Horsley, M.

Research Reports


Refereed Conference Paper to Preview


Refereed Conference Papers


Book


Books


**Book Chapter**


**Book Chapter**


**Refereed Journal Articles**


**Consultancy Reports and Research Papers for UNESCO/IOE/UNDP Regional Vocational Curriculum Development Project (published)**

Horsley, M. (1986). *If you don’t have the Word you don’t have the Concept (Translating Business Discourse)*. IOE, UNDP/IOE/UNESCO Vocational Curriculum Project Conference. December: Cook Islands


Appendices
CHAPTER 9

Appendices

9.1 Appendix 1

Key Educational Concepts in Pasifika Australian Education

This section provides an introduction to key cultural concepts underpinning Pasifika cultural conceptions of education. This has been provided to complement the discussion and papers presented in Chapter 2 and Core Issue 1 in Chapter 1.

Pasifika learners experience life through a much broader and tighter social kinship network, based on the extended family system, than learners from western societies. In Pasifika cultures, a person's life force is fostered through tradition based knowledge, use of language and contributions to the family. The family (aiga in Samoan) is the cultural base of life. Development of the individual's life force (mauli) and presence and power (mana) serves the family and contributes to the development of the community. Learners develop in cultural environments (for example Maori whanau) that foster working cooperatively for a common family purpose that anchors traditional cultural identity. The most important cultural environment is the kinship group (aiga - the extended family), and a person's rank within this group and clan. The school and community, and then the world constitute other important environments.
According to Hawaiian (Native Hawaiian Education Council, 2002) conceptions of the development of the life force:

The body contains three umbilical chords (Hawaiian piko): the spiritual connection found at the head; the inherited/family connection found at the navel; and the creative/inventive connection found below the navel at the ma'i. Maintaining our connections enables us to understand the knowledge of the past as a foundation for the present to continue our legacy and further develop it for future generations. Our sense of spirituality, family, place and legacy are maintained and perpetuated through these connections.

In Pasifika cultures these connections are fostered by integrity (in Maori for example pono), fairness (Maori tika) and love and inclusiveness (Maori aroha). Within extended families, relationships are conducted to maximise the impact of extended family commitment, connectedness and purpose. As a result, Pacific island learners value aroha (love and a sense of security) highly both in family and school life. Family ties and aroha are exceedingly strong, even among distant relatives. The extended family, with its close and connected personal relationships, plays the prominent role in the life of the South Pacific islanders. Within the extended family, aroha (love and security in togetherness) is often expressed in terms of good personal relationships, with close relationship ties more important than other life goals. In education close relationships between the learner and the teacher, personal trust, respect and loyalty, is referred to as the spirit of aroha (Samoan 'alofa', Tongan, 'ofa' and Hawaiian 'aloha').

Although loosely translated as a love, aroha more reflects 'the embodiment of all the best attributes of one's concern for the welfare of a fellow human being and for satisfying personal relationships' (Native Hawaiian Education Council, 2002)
The emotional ties of *aroha* between children and their parents extend to and incorporate relatives (of the extended family), and people who are closely associated with the family, such as teachers (Tongan *fakiako*). Learning occurs within the cultural environment of *aroha, honua* and *mana*. Relationships and the quality of relationships are seen as the key processes in the way that learning and development occurs. Learning includes emotional and moral support connected by *aroha*.

These cultural conceptions based on traditional family relationships are important for understanding the education of Pasifika Australia students. In particular, these cultural conceptions focus thinking on the importance of classroom relationships. Since relationships depend on cultural and social frames, reflecting on pedagogy and curriculum requires reflection on the social construction of Polynesian Australian (Pasifika) learners. Pasifika learners are constructed through the strength of their polynesian socialisation. This socialisation is based on three foundational educational concepts, 'namely 'ako' (learning, teaching/co-learning), 'ilo' (knowledge) and 'poto' or wisdom' (Vaiolete, 2001). Helu-Thaman (1988;2003) describes ako as a lifelong, continuous process, a precondition to gaining knowledge, 'ilo', and becoming 'poto' or wise. Pasifika student's personhood and identities are expressed and located by their role and relationships to and with the family and their role in the wider extended family. Education in this cultural context means the seeking of *ilo* or knowledge through study, observation and practice. If knowledge and *ilo* is used by learners to assist the community and family, then the education and the person gaining it is seen to have achieved *poto* or wisdom. Appropriate personal relationships are integral to *ako, ilo* and *poto* and not separate from them.
Also integral to Pacific island cultures is the assumption that every member must learn their role in the community. Education is expected to assist learners to learn this role and their attendant responsibilities to the wider family, community and society. Poto in particular relates to wisdom that acts to benefit the wider family and the learner's role in it. In addition, these roles were mostly learnt by observation with the guidance of an expert (a relation or member of their community). Meleisea and Schoeffel (1996) note that 'Polynesians… are conditioned from early childhood to learn passively, primarily by careful observation and listening, reinforced by admonition so that they become sensitised to other people at an early age'.

Traditional Pasifika education systems featured a holistic and enactive approach to learning and development (Helu-Thaman, 2003). In this approach the role of the teacher focused on providing a role model featuring compassion and love; the role of knowledge was to gain wisdom for the benefit of the family and community; the aim of learning was to enable the learner to meet their role obligations to the family and duties to their community; and through collaboration respond to the directions of senior family members possessing high rank. The holistic approach to learning also emphasised the primacy of the affective domain of learning, as ofa and aroha (love and compassion) are essential to learning and development for the extended family context. Socialisation in this culture creates learners who value

- cooperating in learning tasks, even assessment
- sharing knowledge, resources and learning materials
- obligations to help each other
- communal approaches to learning
• responsibilities to assist younger, less knowledgeable students
• friendly personal relationships as a key to playing one’s role as a teacher and learner

These traditional indigenous educational ideas remain at the core of the culture and learning of Pacific islanders, even in the Australian school context. Traditional epistemology and educational ideas shape and construct their identity, culture and being. Western curriculum and education systems which neglect these values, relationships, social practices and understandings ignore the entire purpose (or end) of education. The implications of indigenous education ideas for curriculum and pedagogy have been further spelt out by Taufe’ulungaki (cited in Helu-Thaman, 2003):

*Teachers must capitalise on the wealth of experience, knowledge and skills the children bring with them from their home cultures to the learning process, and deliberately use those values, beliefs, world views, knowledge, speech rules and learning systems to organise their classrooms, communicate with and teach their students.*

Helu-Thaman (2003) has argued that a cultural gap has arisen in the education of Pasifika student. This cultural gap has been described (Helu-Thaman, 2003) as the cultural distance between the culture of the classroom and the home. It refers to the processes of exclusion of the culture and non-school lives of students from the curriculum and pedagogy of what happens in school. Secondary teachers in particular see the schooling process as one of teaching their subject and maximising the academic outcomes of their students. Outcomes are demonstrated through assessment processes that bear no relationship to the Pasifika Australian cultural context of the young people who are their students.
CHAPTER 9 Appendices

9.2 Appendix 2

Findings of Academic Salary Relativities Research

Background

Project Background

This project was funded from the 2001 Higher Education Innovation Program. In the words of the Project Brief, it arose from:

suggestions from the higher education sector that academic salaries have declined in comparison to other groups in Australia and at an international level.

Project Objectives

The project brief identified the scope and purpose of the project as follows:

- identify occupation groups in Australia which are able to be used as valid comparisons for salaries of academics, for example, accountants, public servants, IT professionals;
- identify occupation groups in overseas countries which are able to be used as valid comparators for salaries of academics;
- conduct research into the salaries of Australian academics and of those professional occupation groups in Australia and the countries identified;
- develop a clear picture of academic salaries and how this compares with professional salaries in Australia and internationally;
- analyse salary relativities in the operation of the Australian academic labour market;
- report on the findings of the research and provide advice to the Department on the outcomes.

Methodology

The project team conducted five overlapping research projects to develop data that would enable it to analyse national and international academic salary relativities.

First, a literature review was carried out to identify and survey current research on both national and international salary relativities and movements.

Second, a series of interviews was conducted with senior management of thirteen universities. Senior management consisted of the Vice Chancellor or Deputy Vice Chancellor and/or management staff concerned with staffing and human resources.

Third, a benchmarking of academic and private sector occupations, job descriptions and salary relativities was conducted by Mercer Human Resource Consulting, a major international human resource firm. This benchmarking procedure was conducted both in Australia and internationally. The benchmarking process, which developed private and academic salary comparators for the academic and private sectors, was validated in discussions with executive deans from a university from the sample of universities selected for interviews.

Fourth, the project team collected a number of case studies dealing with the issues raised in the interviews and salary benchmarking research.

Fifth, the project team analysed recent Australian university employment advertisements. This was carried out after the interviews had been completed in order to review and confirm issues raised.

General Conclusions

1. Australian universities are making extensive use of salary loadings and other incentives to attract new academic staff and hold existing staff. The incidence, size and range of these incentives vary substantially from university to university and from discipline to discipline. (Chapter 4)

2. The main reason for the use of these incentives lies in the relative uncompetitiveness of Australian academic salaries with comparable private sector salaries in Australia and overseas academic salaries. (Chapters 4 and 6)

3. There are two levels of Australian academic positions that are the most difficult to fill: those at the bottom end of the salary range, associate lecturer and at those top end, professor. (Chapters 4 and 6)

4. The difficulty of filling positions at the lower end represents a possible major problem, as it may reflect the declining attraction of academic careers. (Chapter 4)

5. There is evidence of a major shortfall of academics expected in the English-speaking world over the next decade making it even more difficult for
Australian universities to recruit staff. (Chapters 3 and 8)

Detailed Findings

Recruitment of academic staff

- Australian universities recruit their academic staff from four main sources: from their own student bodies, with the students entering the lowest salary bracket under a variety of arrangements; from other Australian universities, from the Australian private and public sectors and from overseas universities or research institutions.

- Students recruited from university research degree programs; however, a significant number of universities indicated that in certain professional employment markets, university salaries are so uncompetitive that few research students seek university employment.

- Universities reported that staff recruited from both private and public sectors usually were offered higher level salaries than their academic qualifications and research record would normally entitle them, as a way of matching their non university salaries.

- Research-intensive universities typically employ a number of academics recruited from the international academic labour market. They indicated that Australian academic salaries have become uncompetitive with international salaries and as a result appointments of overseas staff were dependent on the further incentives they could offer.

- There are major differences in the recruitment experiences among academic institutions. While the overall turnover of academic staff in full time positions is low, there are major differences in the degree of difficulty experienced in filling positions, though all universities have some recruitment problems at the lowest and the highest positions.

- In those universities having significant difficulties in filling positions, salaries were a significant issue.

- The success rate in filling academic vacancies was bolstered in almost all of the universities visited through the payment of loadings to significant numbers of their academic staff. The proportion of staff receiving a salary loading in the universities visited varied between zero and twenty percent. In general these loadings were concentrated in particular faculties.

- These figures for salary loadings disguise the full extent of the lack of competitiveness of current academic salaries. To understand the full extent of this position, allowances would need to be made to quantify the effect of the increasing collapse of the associate lecturer position as a real part of the salary range.

- The research-intensive universities visited indicated that they see themselves as competing in the international academic labour market and claim that the current levels of Australian academic salaries are uncompetitive.

- When attempting to attract overseas applicants the universities find that these applicants use their higher overseas salaries and often better working conditions in bargaining with Australian institutions. This experience is matched by those universities wishing to develop a research specialization and need to attract high quality staff internationally.

- Because of its relatively low academic salaries, compared to some key markets, Australia is losing the ability to recruit quality academics from overseas, except for the occasional Australian wanting to return home.

- In those universities having difficulties in recruiting and retaining staff, most faculties claimed that the higher levels of salaries available in the comparable professional field were causing them difficulties in recruiting staff and in some cases in retaining them. These difficulties are leading to academic position and salary bracket creep.

Attracting new entrants to academic ranks

- There was a view among those interviewed, expressed to varying degrees, that academic life is losing its attractions for potential entrants at the lower levels of academic positions. This is an important issue because this pathway has been an important recruitment source for academics, and is vital for the academy to continue to reproduce itself.

- Some respondents claimed to have noted a decline in doctoral applications which reflects a view among many better students that life outside academia is more rewarding and that academic life is no longer highly valued in the community.

Widespread Assumptions about the competitiveness of Australian academic salaries

- Australian academic salaries are low when compared to those in the United States, Canada and the United Kingdom.

- Australia is suffering from an academic and research brain drain with at least some of our best staff moving overseas to enjoy the benefits of the better financial rewards in overseas academic or research institutions.
• Australian academic salaries are unattractive when compared to the more financially rewarding positions in the private and even the public sector.
• Comparatively poor salaries are frustrating the appointment and retention of quality academic staff.
• The declining attraction of an academic career leads to the possibility that the Australian academic labour force will not be able to reproduce itself.

Comparing academic salaries
• Unqualified comparisons of academic salaries with those of other sectors are generally unrealistic, given that the teaching and research undertaken by academics makes academic positions different from most related professional positions in the private or public sector. On the other hand there have been major changes in the nature, structure and conditions of academic work leading to some convergence with non-academic employment.
• While differences in staff duties between the sectors may be evident, it does not follow that the academic labour market is not affected by the salaries being paid in related professions in the general labour market. The hierarchy of salaries according to disciplines being paid to some academic deans and other staff in Australia is an obvious reflection of the salary hierarchy in the general labour market.
• As yet Australia does not have the substantial salary differences by discipline paid in the United States and in Canada.

Payment of academic salary loadings by Australian universities
• While we could find no evidence of widespread differences among disciplines in academic salaries in Australia, the long accepted practice of the payment of a loading to clinical academics is an acknowledgement that at least for those positions there are special circumstances that justify a loading. What we did find was that the range of disciplines and individual positions for which salary loadings were being paid has spread significantly beyond clinical positions.
• These incentive payments were most noticeable for disciplines in high demand in the general labour market such as information technology and some business areas but were also being paid to individuals across a range of other disciplines. They demonstrated that universities had to be prepared to offer salaries and other benefits beyond the “normal” if they were to succeed in attracting and retaining appropriately qualified staff.

Payment of other benefits to academic staff
• Despite suggestions that Australian universities are highly conservative in their human resource policies and practices, the evidence gathered in the project revealed a very wide range of approaches being used to attract new staff.

Evidence of the lack of competitiveness of Australian academic salaries
• Analysing the private sector salary data provided by Mercer (the international recruitment firm that provided this data) reveals that Australian academic salaries are generally lower than salaries for comparable positions in the private sector. This is true across all of the job families and levels compared but is most obvious in information technology.
• There are other indicators of the comparatively low rewards for academic salaries. The evidence from average weekly earning data reveals that there has been a significant decline in relativity when the movement in academic salaries is compared with that in average weekly earnings.
• Data about some key benchmarked positions provides further evidence of a relative decline in academic salaries
• There is some recent ABS data that reveals that academic salaries between 1996 and 2001 grew as strongly or more strongly than other professional salaries; however, this has not altered significantly salary relativities established in earlier periods.
• International comparisons of academic salaries reveal that Australian salaries, though well placed on international league tables when purchasing power parity (PPP) is taken into account, are not competitive with those in the main English speaking countries.

Areas for further research
The project identified a number of areas that were considered worthwhile for further research. These include: the lack of attraction of academic careers, academic recruitment, performance pay, movement of academic staff in and out of Australia, the projected labour market for academics in Australia for the coming decade and academic salary scales and structures.
9.3 Appendix 3

Sample Titles from the St. Clair series on embedding information and communication technologies in teaching
Using the Internet in the English Classroom

1998/1999 Supplement

Compiled by Mike Horsley
with contributions by Sheila Black, Nicole Krause, Jenny Meyer, Alison Blake, Alison Houghton, Mike Horsley
Series Editor: Mike Horsley

This Supplement continues and extends the ideas first developed in Using the Internet in the English Classroom by Malcolm Beazley.

The Supplement includes:
- new and updated English Education Internet sites
- new developments in using the Internet in English teaching
- Shakespeare on the Internet
- English lessons and activities based around Internet sites
- some poetry activities for the Internet.

This manual contains:
- examples of Internet communication projects from English classrooms
- ideas on how to develop communication projects for real writing and reading
- suggested access links to other teachers, schools and student communications
- English Education Internet sites
- some key references
- ideas for using Internet sites in the English classroom;
- an appraisal and references on the future of books, authors and reading;
- access to a wide range of personal education sites.

Malcolm Beazley
Series Editor: Mike Horsley
CHAPTER 2 Cultural Learning Reflection in Teacher Education

Activist Professionals and Profession-Led Change

Mike Horsley

EdD

University of Western Sydney
This thesis is submitted
to fulfil
the requirements of the
Doctor of Education
at the
University of Western Sydney
I, Michael William Horsley,

declare that this thesis/portfolio (EdD)
is my own work and has not
been submitted for examination before.

[Signature]
23/11/04
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Also I wish to acknowledge the many school and university teachers and students who have participated in the research studies presented in this portfolio. This research has involved the contribution and expertise of many committed professionals eager to promote best practice.

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Introduction to the portfolio
Introduction to the portfolio

i. Activist Professionals and Profession-Led Change

The publications in this portfolio are focused on issues related to educational innovations and in particular, how improved practice can be encouraged, planned and implemented. The portfolio highlights how those who Sachs terms 'activist professionals', can play key roles in 'mobilising teachers, academics, communities and education authorities' (2003) and so engage in the politics of transformation that invokes 'wider issues of equity and social justice' (Sachs 2003:146). As members of communities of practice that value respect, reciprocity and collaboration, activist professionals forge an identity that is 'strategic and tactical' and 'works strongly in the interests of students and the communities in which the schools are located' (Sachs 2003:138,134). In identifying and promoting better practice, activist professionals are critical of existing structures, and in shaping and embracing the challenges that present themselves they 'frame the future agendas of schooling and education' (Sachs 2003:154).

My research, as an activist professional in both diverse and intersecting communities of practice, has led me to develop a range of benchmarking methodologies as a way of identifying and then fostering better professional practice. These methodologies and their associated better practice have 'the common purpose of reviewing and revitalising teacher professionalism' (Sachs 2003:5). The research I have undertaken, its methodologies, findings and application has always been intended to contribute to profession-led change.

On the basis of of research that I conducted between 1997 and 2003, it is my contention that catalysis is a crucial component in developing, maintaining and
extending communities of practice. In chemistry, catalysis refers to an increase in the rate of a chemical reaction as the result of the introduction of a catalyst. Although a catalyst is not consumed by a reaction, it takes part in the reaction mechanism; according to Ebbing the catalyst 'enters at one step and is regenerated at a later step' (1990:54). The catalyst increases the rate of change through agency. The catalyst operates by producing a mechanism that facilitates reactions, consequently accomplishing a transformation of the original substance.

In those communities in which the research was located, the benchmarking methodologies acted to catalyse the communities. The benchmarking made available new baseline data, often from cognate fields, which enabled communities of practice to reflect on their current approaches and also to develop new insights into research and better practice. In turn, these insights generated profession-led change. Communities of practice 'carry with them normative expectations about how things will be done and what knowledge areas are appropriate objects of interest ... and reflect value commitments held by members of the community' (Pressick-Kilborn and Walker 2002:169). Therefore, the research presented in this portfolio aimed to expand the way that a community of practice could consider foundation research questions and generate principles to guide better practice.

Rogoff, Matusov and White argue that communities of practice 'reflect multiple constituencies ... are always in a process of transformation ... revising traditions ...continue to learn through their varying roles in shared endeavours .... [and] value variations in particular practices within a shared theme' (1996:398). Following Sach's description, the activist professional orientation 'requires risk taking .... working collectively and tactically with others... demanding conviction and strategy' (2000:93). The activist professional creates new spaces for action and debate, and in so
doing improves the learning opportunities for all of those who are recipients or providers of education. Activist professionals catalyse communities of practice by engaging in strategies that empower their members and build new forms of teacher professionalism. Activist professionals shape change by research and reflection. The organising principle for the portfolio reflects the communities of research practice in which the research was located. These communities of practice are both diverse, reflecting the breadth and variety of the research, and intersecting, since they cross community of practice boundaries. Common to the research is use of a variety benchmarking methodologies that have acted to

...challenge, re-map, and renegotiate those boundaries of knowledge that claim the status of master narratives, fixed identities, and an objective representation of reality...[and] recognising the situated nature of knowledge,... and its shifting, multiple and often contradictory nature.

(Giroux, 1992, 22)

Twelve publications have emerged from this research that constitutes the core of my portfolio. Three are commissioned Government research reports (both state and federal); four are articles in refereed journals and four are papers from refereed international conferences; one is an edited research monograph which includes two research papers.

As a body of work the portfolio marks changes in the communities of practice in which I have been engaged. For teacher educators, the professional journey usually requires the crossing of borders separating the territories of school, university and community. Over time teacher educators develop 'passports' denoting their identity, while 'visas' are granted 'demonstrating their legitimacy to travel for certain purposes and within other territories. Such border crossing contributes greatly to the
professional growth and development of educators.’ (Jasman 2002:2). Such journeys also denote professional learning, reflection, improvements in educational practice, mentoring and research. Professional journeys in different educational territories allow entry into what Connelly and Clandinin claim are different ‘professional knowledge contexts that are constituted by professionally shared stories’ (1994:89).

ii. Passports, Territories and Professions

My professional voyage covers greater regions of territories, borders and crossings than those usually conceptualised by Connelly and Clandinan for teacher educators.

One professional territory, educational publishing, has at its core partnership with one of Australia’s key cultural industry bodies, the Australian Publishers Association (APA). This territory is defined by this partnership. Research on Australia’s educational publishing has had the aim of both improving the learning from this field and also leading change in it (see further details in chapter 3).

Another enquiry in professional territory which entailed the crossing of geographical and cultural boundaries, was my venture into the area constituted by the existence and experience of Polynesian Australian (Pasifika Australia) school students. The aim of conducting and disseminating research on teacher education here was to better meet the learning needs of this group. I had crossed this territory earlier in my professional journey when I was a lecturer and consultant in commercial and teacher education at the University of the South Pacific. My most recent crossing involved working with Australian Polynesian communities in order to develop improved teacher education. On the basis of theories on culturally responsive learning environments, this endeavour demanded that I research a cultural dimension in teacher education (see further details in chapter 2).
INTRODUCTION to the portfolio

No academic professional journeys are more difficult than those requiring travel across disciplinary territories. Crossing the high and well protected boundaries erected around disciplinary borders has required the use of a ‘working visa’ for use in the disciplines of economics and industrial relations. My ‘visa application’ has been framed around the use of a benchmarking research methodology originating outside the field of education. Benchmarking has been used to develop comparative data from cognate professions to inform the public policy debate in the further development of teacher education. This research entailed questioning the basic structure of the teaching profession as compared to other professions. This benchmarking analysis has also been applied to the development of new forms of salary comparisons (academic/private) in the academic communities of economics and industrial relations (see further details in chapters 4 and 5).

Another community of practice is that concerned with the education of professionals. Of these, one of the most contested of territories and terrains is that of teacher education. New models of professional preparation such as placing the workplace at the core of professional learning, have revolutionised medical and allied health education. In these professions, changes in teaching and learning methodology such as problem-based learning, allowed diagnosis and other workplace competencies and standards to play a more central role in the education of new professionals. Use of these models has developed a new research territory, focused on linking neophyte professionals with the wider community of professional practice and with practical knowledge and expertise in the design of programs for professional education. In teaching, a new case-based, inquiry-focused teacher education program was developed at the University of Sydney. This led to new research on inquiry- and case-based teacher education, aimed at explicating best practice in these fields.
Elbaz-Luwisch has suggested that encounters with others who define themselves differently allows the participation of many voices in developing a dialogue in which the self can engage in ongoing definition and redefinition (2001:86). In all these territories and communities of practice, catalysis has worked by shaping the researcher through research that in turn shaped the community. The voyage across the territory gives direction to the journey, and progressive discovery reveals the new questions that the community must answer.

The publications below are placed in context and analysed from the perspective of how the research has been developed, its activist professional nature, and how it has impacted on the broader communities of practice in which it is situated. Each chapter discusses core issues that arise from activist professionalism and profession-led change. These issues frame the research and research methodology in the context of the territory and borders involved, and also the professional visas utilised.

iii. How the Portfolio is Structured

Chapter 1 (Overarching Statement: Activist Profession Led Educational Change) is an exploration of the research questions that have arisen during and as a result of the activist professional journey. The publications are then placed in their historical context and analysed from the perspective of how the research questions have been developed. Since much of the research refers to the study of innovations in programs of study, curricula or teaching and learning methodology, this chapter explicates the key issues raised as activist professionals' lead responses to educational change. According to Sachs, inquiry stands at the centre of all activities in developing an activist teacher, a process which requires teachers to
research their own 'practices in order to produce worthwhile knowledge about education which can contribute to their own and others' professional development' (2003:152).

Chapter 1 also links profession-led responses to educational change and the nature of activist professionalism. It further explores how the professionally-led educational change presented in this portfolio has impacted on the broader communities of practice in which they are situated. In her explication of activist education innovators, Sachs has identified five key issues that concern professionally-led responses to educational change (Sachs 2003:16). These issues have been presented in the form of fundamental questions that structure the overarching statement, which precedes the research portfolios in chapters 2-7.

The publications presented in the portfolio set out the researcher's critical reflections on providing research-based perspectives on the evaluation of practice. The historical context reports on the way that the research has been based on the principles of collaboration and partnership in practice, and engagement within communities of practice.

The overarching statement explores both the research question and the development of methodologies. It explores the development and evolution of these methodologies as well as their contribution to a variety of disciplines. It outlines the utilisation of benchmarking in education and its current role in helping educators critically to identify and promote better practice in education. The overarching statement is organised around core questions related to identifying better practices, using benchmarking methodologies, promoting cognate field study, critically evaluating the impact of change and stimulating the transfer of better educational
practices. It describes the relationships between the publications presented and the research methodologies employed in answering the research questions.

Chapters 2-7 contain the publications, their details, their contextual frames and details about communities of practice. The publications are not presented chronologically but have been organised to reflect the communities of practice in which they originated and the core issues they address. Taking a perspective from within each community, the publications present a cohesive argument on how to develop insights that can be used critically to design and foster better practice. The integrative framework linking the research and the originating communities of practice is provided by the comparative benchmarking methodology. The methodologies varied from study to study, reflecting the demands of data in each research community, but remained within a benchmarking paradigm.

Chapter 2 is entitled **Cultural Learning and Cultural Reflection in Teacher Education** and contains three publications:


It is accepted that educational systems in the past have not responded well to the needs of culturally diverse and exceptional populations (Flurio-Ruane 2001). Accordingly, there is an increasing demand that teacher educators prepare new teachers to more successfully teach an increasingly diverse student population. Since 1990 I have conducted a range of programs for Australian school students of Polynesian background as well as for teachers working with these students and for pre-service teachers who will be teaching these students in the future. This research has included explorations of the experiences of Polynesian Australians in Australian schools and the attitudes of these students towards schooling. The research focused further on culturally critical reflection among teacher education students who have undertaken community engagement experiences in Polynesian communities in Australia. It also examined the development of a cultural dimension in teacher education.

Chapter 3, entitled *Educational Publishing* contains three publications;


These publications report observational research on the use of teaching and learning materials in classrooms. The research reflects the work of the Teaching Resources and Textbook Research Unit (TREAT) that I manage in the Faculty of Education at the University of Sydney. Since the establishment of TREAT in 1992, it has specialised in exploring the use of teaching and learning resources in naturalistic settings. This research has been widely disseminated in the Australian publishing industry and led to the establishment of the Australian Awards for Excellence in Educational Publishing, managed by the TREAT. I authored two of the studies and was the lead author in the paper co-written by David Lambert, reader in education at the London Institute of Education, United Kingdom. This educational publishing research has led to two invitations to present keynote papers to leading international research association conferences on textbooks and educational media.

Chapter 4 entitled Professional Education: Quality Across the Professions contains two publications;


These publications are grouped together because they explore general developments in concepts of professionalism and in cognate fields that may assist teaching to negotiate similar questions as it strives to attain professional status. As part of the Teacher Education Review in New South Wales (1998-2000) I undertook a study of the 'systems and procedures used to prepare for and enter other professions in New South Wales' (Teacher Education Review terms of reference 1998). This was the first time that such a comparison had been made between teaching and other professions in this way. This research provided comparative information on how members of the medical, accounting dental, legal, social work, psychological, nursing and engineering professions are trained and prepared for their occupations. It also explored the extent and form of 'on the job training', the structure of professional experience, and the systems of accountability and regulation in a range of professions. A specific study within this research was undertaken to determine the ways different professions updated their knowledge and skills, and explored the system of professional induction operating in a range of professions.

What followed was a study of professional regulation and professional discipline which explored the relationships between accountability processes, procedures for dealing with unprofessional practice and the role of professional autonomy. This research has sparked a renewal of interest in research on professional education. It is my understanding that the research has had a major impact on the way that the teaching profession is rethinking the practice of teacher
professionalism, reflecting on procedures for teacher renewal, reordering the politics associated with professionalism and re-evaluating the preparation of teachers.

This research has had a major impact on the profession, providing part of the theoretical framework which led to the development of an Institute of Teachers in New South Wales.

Chapter 5 is entitled Academic Salary Relativity Research. It contains two research reports;


This research was commissioned by the Commonwealth Department of Education Science and Training (DEST) to explore academic salary relativities both nationally and internationally and also the operation of the Australian academic labour market. The research was overseen and reviewed by a steering committee including representatives from The Australian Vice Chancellors Committee (Professor Don McNicol), The University of Technology (Professor Andrew Gonzci and Dr. Gregor Ramsey) and DEST. The first research report exemplifies new research instruments for conducting academic salary relativity research. Using a benchmarking approach the research was able to develop valid new comparators
for academic and private sector salaries and generate new salary-relativity comparative data. The data was used to develop new insights into the operation of the academic labour market in Australia, and the role of salaries as a price signal in this market. This publication represents the continual development of the benchmarking methodology. I authored the study, devised the formulated benchmarking methodologies in chapters 5 and 6 in the report, and in Chapter 4 reported on the views of Australia's Vice-Chancellors on industrial relations issues. (See section 4 in chapter 5.

The second publication in this chapter reflects an econometric approach to benchmarking. This research explored a range of economic indicators to draw meaningful comparisons between academic salaries (Professorial level - Level E) and movements in the consumer price index and other salary indices.

Chapter 6 is entitled **Case and Inquiry Based Teacher Education**. It contains three papers;


In an attempt to transform professional education the University of Sydney established new medical and teacher education programs in 1996. These placed workplace professional experience at the core of pre-service professional education. This led to the development of the Master of Teaching degree, a case-based teacher education program. As the foundation director of this program I undertook three research studies on aspects of case based learning, these being:

- the design of professional partnerships promoting workplace learning;
- research on anxiety in pre-service learners and;
- the structuring of cases for promoting learning.

These publications outline the results of these investigations.

Chapter 7 is entitled *Virtual Classrooms and Teacher Professional Development*, and contains three publications;


INTRODUCTION to the portfolio

Both secondary and tertiary education is struggling with the challenge of integrating and embedding ICT into classroom practice. As the foundation Director of the new Master of Teaching, established at the University of Sydney in 1996, I played a leading role in embedding technology in the new teacher education program. Since 1995 I have presented over twenty papers, organised symposia and workshops and delivered addresses at teacher professional development courses and programs on the way that teachers can embed technology in their teaching (see bibliography and appendix 3). As current President and long term director of the Economics and Business Teacher Professional Association, I have been prominent in assisting teachers and schools to make innovations in the use of technology. The two publications presented in chapter 7 highlight some of the research that has informed this professional development enterprise.
### TABLE 1 Overview of Research Publications Presented in the Portfolio and Their Associated Communities of Practice

<table>
<thead>
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<th>Journal Article</th>
<th>Focus of Research</th>
<th>Publication Status</th>
<th>Community of Practice</th>
<th>Impact on Community of Practice</th>
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<tr>
<td>Refereed Paper</td>
<td>These papers focus on research in relationship pedagogy. All the papers presented examine aspects of a cultural dimension in teacher education; from developing and evaluating teacher education programs that promote cultural critical reflection, to ways of designing cultural dimensions in teacher education to meet the learning needs of Pasifika Islander students</td>
<td>These papers have been presented to over 500 teachers, 15 Pacific islander community groups, 17 schools and a major Islander research grouping.</td>
<td>Pacific Island Education Group Increasingly teacher educators and teachers are wishing to explore the relationships between culture and learning and explore cultural dimensions to teaching and learning. As well, pacific island communities are seeking greater partnerships ad connections between their communities and children and school. This research has drawn this community of practice together to develop plans, policies and programs to improve the education of pacific island children in Australian school settings.</td>
<td>This research and the programs that were used to generate the data have acted as a catalyst to the school and islander communities. The research has been utilised to develop new research proposals and funded programs from the Premier’s Department on building new linkages between schools, parents and communities. The research has been reported to international symposia and the programs underpinning the report are being replicated in New Zealand and the South Pacific at the University of the South Pacific.</td>
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<td>Research Report</td>
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<tr>
<td>Journal Article</td>
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<td>Horsley, M. (2001) <em>New Studies on the Classroom Use of Teaching and Learning Materials.</em> Invited Keynote Research Address. International Association for Research in Textbooks and Educational Media. Estonia, September. – Invited Keynote Paper.</td>
<td>This research focuses on the classroom use of teaching and learning materials. Using observation based instruments the researcher has developed base line data that provided the educational publishing community of practice with insights into the preparation and better use of teaching and learning materials.</td>
<td>The New Studies research was selected as the keynote research presentation at the International Association for Research in Textbooks and Educational Media, in 2001. The Future of Textbooks Research Monograph was produced in response to demands from the educational publishing industry for research on current trends in school publishing.</td>
<td>Educational Publishing. The publishing community of practice includes teachers, researchers, publishers and authors. This research involved partnerships and cooperation between publishers associations in Australia, the UK and Germany, teachers in the UK and Australia and researchers from three of the leading publishing research institutes in the world.</td>
<td>These publications, representing an example of collaboration within the community of practice, provided the educational publishing community with significant new international benchmarks to inform the development and use of teaching and learning materials. The research has been used to develop criteria for the Annual Australian Awards For Excellence in Educational Publishing – the most important event in the Educational Publishing Calendar and has been instrumental in developing long term benchmarks for the Australian publishing industry.</td>
</tr>
<tr>
<td>Journal Article</td>
<td>Focus of Research</td>
<td>Publication Status</td>
<td>Community of Practice</td>
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<tr>
<td>Refereed Paper</td>
<td>Benchmarking across the professions allowed the researcher to identify the way that other professions were structured and organised, the links between registration, accredit, and licensing and continuing professional development and the links between professional experience and induction.</td>
<td>This research was commissioned by the (Ramsey) Teacher Education Review established by the New South Wales Department of Education in 1998. It was published in the Review of Teacher Education and was the principal research project developed by the review.</td>
<td>Professional education across the professions and teacher educators. The Interim Institute of Teachers (NSW) and Review Task Force.</td>
<td>The research on comparing professional quality, professional preparation, continuing professional development and systems of induction, licensing and accreditation were an original contribution to the research on professional preparation. The Ramsey Review’s recommendations to establish an Institute of Teachers in New South Wales drew strongly from the benchmarking study of different professions.</td>
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### Introduction to the Portfolio

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<th>Journal Article</th>
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<th>Publication Status</th>
<th>Community of Practice</th>
<th>Impact on Community of Practice</th>
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<tr>
<td>Horsley, M. Woodburn, G. and Martin, G. (2003) <em>Salary Relativities and the Academic Labour Market</em>. Department of Education, Science, and Training. Canberra – Federal Government commissioned Research Report</td>
<td>Critical evaluation of prior econometric analysis and time series approaches. Development of a new more qualitative benchmarking approach to measure meaningful comparisons that resonate with Higher Education experience in the academic labour market.</td>
<td>This research was commissioned by the Commonwealth Department of Education Science and Training (DEST) to explore academic salary relativities (both nationally and internationally) and the operation of the Australian academic labour market. The research generated new methodologies to measure comparative wage justice. The research was refereed by a steering committee of stakeholders from the Higher Education Sector.</td>
<td>Academic Salary Relativity Researchers Increasingly changes in the academic labour market are impacting on the operation of the University sector. Labour market and Higher Education researchers have found it difficult to develop data that compares public and private sector salary relativity issues. This research generated new data that shaped debate in DEST.</td>
<td>This research developed a new benchmarking research methodology for comparing academic and private salaries. It raised key issues about the operation of the academic labour market to be considered in the Crossroads review of the national Higher Education System.</td>
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</table>
### Journal Article

**Refereed Paper**


### Focus of Research

Case based teacher education, a recent innovation, has been designed to place workplace tasks at the core of professional education. The focus of this research was to investigate how structuring case based teacher education influenced teacher learning from teaching cases.

### Publication Status

A number of multi authored papers reported on the development, establishment and implementation and evaluation of this innovative teacher education program. These papers were presented at many teachers education conferences and submitted to many Journals to inform the community of the progress of case based teacher education.

### Community of Practice

Teacher Education

The Master of Teaching, Australia's initial case based teacher education program, involved a collaboration between the Faculty of Education academic staff, the support of twenty four partnership schools and a writing project where 40 teachers wrote teaching cases for the new program. The research on structuring cases for teacher learning has been widely shared in this community of practice.

### Impact on Community of Practice

This research on case based and inquiry based teacher education has been influential in considerations of teacher education pedagogy. The author was invited to guest edit a Journal on innovations in teacher education.

The research has been used to construct professional development programs for teachers wishing to embed technology in their teaching. In 2003 the EBE professional teachers association developed six professional development courses based on these principles.
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These papers focus on research on embedding technology into classroom teaching practice. The papers reflect action research undertaken in the partnership schools of the Faculty where technology was embedded into the teaching of units of work in secondary schools.

The publications are refereed conference papers.

The author has delivered over 30 papers, seminars, workshops and presentations on embedding technology in teaching in secondary school social science classrooms.

*Economics and Business Educators*

Increasingly teachers of business studies, economics, legal studies, history, commerce and the social sciences have been encouraged to incorporate, integrate and embed ICT into their teaching.

My research has been explore classroom applications of technology embedding and bring this research to the community of practice that is *Economics and Business Educators*

In 2002/03 the principles developed form this research were used to develop the NSW History project professional development program for history teachers embedding technology into their teaching and in 2003 an Australian Government Quality Teacher project grant was awarded to the University, The Catholic Education System and the Professional teachers association EBE to develop action research and action learning school based projects on the basis of the research results.