Assessment for Learning: Enhancing activities to learn Mandarin

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Declaration

I declare that except where due acknowledgement has been made this research thesis is my own work and has not been submitted in any form for another degree at any university or other institute of tertiary education. Information derived from the published or unpublished work of others has been acknowledged in the text and a list of references is given.

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February, 2011
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Abstract

This study is about assessment and learning – student learning and teacher learning. A view of assessment was explored that is in contrast to the currently dominant paradigm for assessment. Rather than simply measuring learning outcomes, formative assessment, or more specifically, ‘assessment for learning’, aims to promote student learning and help students to take more responsibility for their learning. In this study, a beginning teacher-researcher investigated whether formative assessment could be embedded in classroom activities and games to promote student learning of Mandarin more effectively. This study conceptualised assessment from a constructivist view of teaching and learning and investigated assessment in terms of its interrelationships and coherence with curriculum and pedagogy.

The study employed an essentially qualitative methodology of teacher-as-researcher with an action research perspective. However, the quasi-experimental design also incorporated a quantitative dimension to measure the effectiveness of embedded assessment in two sets of paired classes in a primary school. Embedded assessment, with its associated feedback, was the only experimental variable. Both the control and experimental classes in each pair followed a two-weekly action research cycle. Data were collected from the teacher-researcher’s reflective journal and classroom teacher feedback throughout the study as part of an action research cycle, as well as student interviews, teacher interviews and student tests at the end of the study. The qualitative data were analysed using thematic analysis, while the quantitative data were analysed using the Statistical Package for the Social Sciences.

The study showed that activities and games are effective pedagogical tools for student learning as they embody views of constructivist and student-centred learning. It explored the difference between what test scores showed and what participants thought about the role of embedded assessment in student learning. The ability of students and the teacher-researcher to use relevant processes was shown to be an important influence on the effective implementation of formative assessment. The study showed that the teaching skills of the beginning teacher improved as a result of the professional learning that accompanied the conduct of the research. However, it also showed that when the teaching competency required to conduct the research was
beyond that which is normally expected of a beginning teacher, the quality of both teaching and research was compromised. The study showed that adequate time was an important consideration in all aspects of teaching, learning and research.

This study makes a contribution to the development of assessment theory by highlighting the integral connection between assessment, learning and teaching. It shows that assessment promotes student learning when it shares an interactive interrelationship with curriculum and pedagogy. In doing so, both student and teacher learning about assessment are enhanced. Consequently, it is indicated that views of curriculum and pedagogy may need to be adjusted to accommodate and support changes in assessment practice. The study indicates that the teacher-as-researcher model of teacher education was effective in promoting the professional learning of beginning teachers.
Chapter 1: Introduction

1.1 Introduction

This chapter introduces the study by providing background information about the use of embedded assessment in teaching primary aged students the Chinese language Mandarin. It details the use of activities and games into which student assessment was integrated so that the activities, in themselves, could promote student learning. This chapter describes the context of the study and the background of the teacher-researcher. It describes some of the life experiences of the researcher and her connection with assessment and assessment processes. These experiences were an important influence on her interest in exploring alternative approaches to assessment. This chapter enables the reader to gain an insight into why the researcher committed to this study, what the researcher tried to achieve, and the significance of the research. It lists the research questions and outlines the methodology of the research, its scope and limitations and concludes with an outline of the thesis.

1.2 Background

As a product of the Chinese education system and a survivor of the Chinese assessment system I can say that I could succeed in any kind of test given in any part of the world. In China, assessment equals a test. China has a long history of using tests. The use of tests can be dated back to the Western Zhou Dynasty (1027-771 BC) (Meng, Cheng, Zhang & Chou, 1986). Ever since, tests have been used as a means to assess students and determine the extent of different talents. In contemporary China, because of the fierce competition for employment, tests have been consolidated as the dominant form of assessment and have earned a reputation for being reliable (Rotberg, 2006). Consequently, a test-oriented education system has developed, which in turn overwhelmingly impacts classroom practice, with students being trained to sit countless tests in a variety of forms.

As a product of this system, other than having a thorough knowledge of tests and testing systems, I had no idea of what could be alternative forms of assessment. I was
encouraged, required and sometimes even forced to take tests by teachers and parents to assess what I had learnt and how well I had learnt it. From my first day at primary school I experienced thousands of tests. Constant testing made me tired and scared of tests so that now I abhor this particular type of assessment. I can truly say that my psychology as a student, indeed as a person, has been adversely affected by the testing regimes to which I was subjected from a very early age. A painful experience with a mathematics test in primary school was the catalyst for my feeling this way. The experience was truly a nightmare and haunted me for years. Perhaps it still does.

Since the fourth grade I have struggled to survive tests in mathematics. Mathematics tests were conducted once a week, sometimes even twice. I was buried by an avalanche of these tests. I racked my brain to answer questions in the tests. After each test I felt like a phoenix rising from its ashes. I never experienced relief because any momentary thought of relief was tempered by the realisation that it was now a countdown to the next test. But this was not the worst experience. Even before the next test, there was the anxiety of the announcement of the marks for the test just completed. Ms Tang, our mathematics teacher, announced every student’s score to the whole class according to the ranked score, from highest to lowest because she wanted us to know where we stood in the class. Ms Tang believed in The Art of War theory written by Sun Tzu (6th century BC): If you know both yourself and your enemy, you can win a hundred battles without a single loss. (Zhī jī zhī bǐ, fāng néng bāi zhàn bù dài. 知己知彼，方能百战不殆). Ms Tang strongly believed that her behaviour was helpful; however, it was torture for almost every student. Every time she announced the results, I, along with my classmates, was on the edge of my seat. During the announcement I always kept my fingers crossed and held my breath in the hope that my name and result would be declared as early as possible. I was nearly killed by the suffocating classroom atmosphere; if not physically, then certainly emotionally and, I now believe, psychologically. Moreover, I had to endure the scorn from Ms Tang. Ms Tang teased me because of my name.

My given name is Yi (一), which means number one. My parents named me Yi in the hope that I would be a top student in study. However, I did not live up to my name because of my poor performance in mathematics tests. Ms Tang always poked
fun at my name with sarcastic remarks in front of the whole class. Mathematics lessons were tests so tormenting that I did not translate them into a learning opportunity at all. Instead, the tests completely destroyed my self confidence and made me wary and weary of mathematics. As in any war, such an unpleasant experience brands and scars the memory and the self forever. When I entered secondary school and university, I was hoping that I would be assessed in less time-consuming and more creative ways. I was disappointed. The only thing that changed was the frequency of the tests. Tests were still predominantly used to assess learning. I felt sorry for myself and for my classmates because we had to continue to war with each other and compete in a life of study dominated by tests. I sincerely hoped that one day there would be a different form of assessment to relieve anxiety and provide more time for learning while providing information about what was being learnt.

In 2008 the Research-Oriented School-Engaged Teacher Education (ROSETE) project was launched (Singh & Zhao, 2008). In 2009, I was selected by Ningbo Municipal Education Bureau (NMEB), China, to be part of the second cohort of this project. The project was designed by NMEB, the New South Wales Department of Education and Training (DET) Western Sydney Region (WSR), and the University of Western Sydney (UWS) Australia, as a project that enabled volunteer teacher-researchers to teach the Chinese language, Mandarin, in Australian schools for 18 months (Singh & Zhao, 2008). In order to be selected as a volunteer teacher-researcher I went through a series of tests to meet the requirements. I attained at least an upper second division in Mandarin proficiency tests, achieved at least an IELTS\(^1\) 6.5 or TOEFL iBT\(^2\) 89 score, qualified formally as a certified teacher in China (by passing a series of tests rather than completing any form of training), and succeeded at interviews conducted by experts. There is a memorandum of understanding between NMEB and NSW DET where NMEB selects 10 ‘qualified’ Chinese volunteer teacher-researchers (VTR) to teach Mandarin and Chinese culture in New

\[\text{IELTS: International English Language Test System}\]
\[\text{TOEFL iBT: Test of English as a Foreign Language Internet-based Test}\]
South Wales Western Sydney Region schools. At the same time, the VTRs study a Master of Education (Honours) at the University of Western Sydney (UWS).

As a VTR, my major task was to teach Mandarin in schools while completing a research degree at UWS. From the very first academic meeting, our supervisors told us we should combine our teaching and research. I taught Mandarin at a Blue Mountains Public School and a Senior High School in the Western Sydney Region. The variation in the students I taught was great. They ranged in age and experience from Kindergarten to Year 12. They ranged in geographical and cultural distribution from the Blue Mountains to the western suburbs of Sydney. Consequently, the range in related socio-demographic characteristics across these students was huge.

On my first day of teaching I observed a VTR colleague from the first NMEB cohort. What impressed me most was the VTR’s control of time. The time allocated for each lesson was relatively short. Each lesson lasted from 20 to 30 minutes. Within that limited time, new concepts were taught and activities and games were organized and conducted. After observing classes for two weeks I wanted to teach on my own. The lesson I taught was about ‘likes and dislikes’. I taught the students how to ask, in Mandarin, the question: “Which fruit do you like to eat?” (Nǐ xǐ huān chī ____ ma? 你喜欢吃 ____ 吗? ), as well as how to answer this question in Mandarin (Wǒ xǐ huān chī ____。我喜欢吃 ____。). Meaning, I like to eat . . . (whatever the fruit it was they selected). I also explained the grammar associated with these sentences. ‘Chī’ is a verb and ‘ma’ implies a question. During my explanation I could tell from the glazed-over expressions of students that they were confused. I became upset because the more I explained, the more confused they became. This worried me greatly.

I then changed the lesson completely. I told the class that we were going to play a game called ‘Battleship’. I explained the rules of the game. Students were to pair up and each had to write down the names of three fruits they liked to eat without the other person seeing what they had written. They then took turns to ask each other which fruit they liked. They were to ask this question in Mandarin (Nǐ xǐ huān chī ____ ma?). If the person, being asked the question, had written a fruit they liked, on
their sheet of paper they could cross it off. The question was repeated by each person in the second round but the name of the fruit was changed. The person who had all their fruits crossed off first won the game.

The students all applauded the Battleship game. While they were playing the game, I walked around the classroom to see how the game was going. I did this to make sure the students understood my instructions. I found that the students not only played the game well but used the knowledge they were taught. The students used the Battleship game to practise and reinforce their Mandarin. The recognition that students did learn while playing the game really surprised and excited me. For the first time I became aware that activities and games could serve other purposes. They not only interested and relaxed students, they actually helped them learn. I realised that activities and games were a powerful way to promote student learning.

My second lesson was the following week. The teaching content was about parts of the face. After teaching the students how to say each face part in Mandarin and associating the names of face parts with the students’ own faces, I asked them to construct a face on the board. This was done by asking students, one at a time, to come to the board and draw a face part. I told them the name of the face part in Mandarin. For example, when I said 头发 (tóu fā), meaning hair, the student drew hair on the board. While I was watching the students drawing, I realised I was using the activity to assess their learning. I could tell from each student’s drawing whether they understood the Mandarin word. If they understood the Mandarin word, they drew the correct face part. In this way, activities and games could be used not only to teach in an interesting and engaging way, but to assess student understandings at the same time, without their being aware they were being assessed. I could use student feedback from activities and games to gauge what they had learnt.

After my first few successful teaching experiences, I knew that using activities and games to promote student learning and embedding assessment in them would be the focus of my research. It was also apparent that by conducting this study and adjusting my classroom practice by incorporating what I had learnt, my teaching would improve. As a VTR, my task was to promote the Chinese language Mandarin in Australia. I began to think the best way I could do this was by using activities and
games. As a teacher-to-be in China, I cannot resist thinking that using activities and games in Chinese classrooms to increase student learning and assess their learning, will be exciting and will help dispel the Chinese myth that assessment is merely ‘tests’.

1.3 Research questions

The main research question driving this study is:

- Can assessment strategies be embedded in classroom activities and games to more effectively promote student learning of Mandarin?

The subsidiary research questions are:

- Are activities and games effective in promoting the learning of the Chinese language Mandarin?
- Can assessment be integrated into classroom activities and games as part of the learning process?
- Is embedded assessment an effective teaching strategy for promoting student learning?

This study explores the relationships between classroom activities and games, formative assessment, and the promotion of student learning. It examines the role of activities and games in promoting student learning of Mandarin and, because assessment is part of the learning process, activities and games were developed to be used as a way of assessing student learning. As a VTR, I have a strong sense that I should promote a desire for students to want to learn Mandarin. Therefore, this study is about developing and using activities and games, and embedding assessment strategies to promote student learning.

This study is contextualised by a short lesson time for stage 1 (Years 1 and 2) and stage 2 (Year 4) learners. Given the time constraints, the age and learning capacity of students, the content covered had to be appropriate and focused. For example, a lesson had to cover no more than five vocabulary items each lesson. Consequently, a lesson had to introduce new content, deliver that content in an interesting activity-
based way and assess student learning in half an hour or less. The timeframe also had to allow for student practice. The purpose of the practice was to reinforce student familiarity with the content. In China, and in some Australian language classrooms, repetition is used as a memorisation technique. However, in most cases, monotonous drills lead to student disengagement. Students repeat the words, phrases or sentences without understanding or even awareness of what they are saying. Under these circumstances, developing an appropriate and effective way to practise new language became an important aspect of this study.

Activities and games are useful ways to engage students in lessons and increase student learning. An important aspect of a game is that it is a fun way of providing an opportunity for practice – drill without the boredom – so that new words are implicitly learnt. Games provide opportunities for students to practise and apply new knowledge in the same way as drills, but in a more interesting way. Games can be effective tools for enhancing learning and the understanding of complex subject matter (Cordova & Lepper, 1996; Ricci, Salas, & Cannon-Bowers, 1996). Students are, at first, engaged by the ‘fun’ component of playing games, where the content is closely related to the content to be learnt. When they become players, the students not only use the content, they begin to manipulate it and apply it slightly differently. They begin to understand it. If they want to win the game, which most students do, they need to practise more carefully and more often. In this way, content becomes part of their thinking, and learning is enhanced. Just as the student is central in the learning process, the player is at the centre of the game or activity. In essence, learning is promoted when content is embedded in an interesting and entertaining context.

This study investigated the effectiveness of embedded assessment in classroom activities and games. Assessment is an indicator of what students have learnt. It “involves making considered judgments about what students have learned and understood, how they are learning, and where they are along their personal learning trajectory” (Scarino & Liddicoat, 2009, p.68). Assessment can also provide teachers with the accessible and useful data that they need (Nicol & Macfarlane-Dick, 2006; Heritage, 2007). It can indicate what content has been learnt and which teaching strategies have been most successful. Assessment “can help teachers generate
cumulative information about students’ levels of understanding and skill, so that they
can adapt their teaching accordingly” (Nicol & Macfarlane-Dick, 2006, p. 214). After
careful and systematic analysis of assessment and feedback, teachers can
reflect on, modify and improve their teaching. Even though these are evaluative
processes, they require feedback or information from assessment. Therefore, quality
assessment processes are a must for all teachers, particularly beginning teachers.
Consequently, it was important to assess student learning for my development as a
beginning teacher.

I was not an experienced teacher before I came to Australia. The teaching method
training sessions provided by NSW DET, helped me a great deal. They helped me
learn to teach ‘on the job’. When I was teaching, I did not know if my teaching was
good or not. I was worried about my teaching and lacked self confidence. I tried to
find out how students learnt. Continuous assessment during lessons was the only way
to help me know whether my teaching was promoting learning. Wehlburg (2008, p.
xii) claims that: “good teaching requires knowing what students are learning, and to
know what students are learning requires assessing them in some way”. I could not
allocate dedicated time to assess students, because the lessons were so short.
Essentially, I needed constant feedback from assessment to help me learn how to
teach better, as well as to provide feedback on student learning. This all had to be
achieved in the limited timeframe of less than half an hour for each lesson. Such a
limited timeframe could not afford dedicated assessment time at the expense of
teaching time.

As a beginning teacher I did not have the background or skills to assess students
accurately as part of my classroom teaching. Moreover, it is not the usual practice in
Australian primary classrooms to assess students using tests. Circumstances provided
a personal learning context where I could research my practice as a beginning teacher
while simultaneously improving student learning of Mandarin. Consequently, the
study design and methodology served the dual purpose of providing feedback both
on student learning and on my own progress as a teacher.

I soon realised that I would be assessing student learning using activities and games
and that this feedback would help me to improve my teaching. Using activities and
games as a method of assessing student learning of Mandarin is something that I had to become skilled at. Activities and games had to become a standard part of my Mandarin lessons and I knew they would take up a great deal of class time. Consequently, I had to learn how to maximise learning benefits from activities and games and how to assess students directly. I had to learn how to develop teaching activities and games that facilitated student learning and would be effective in student assessment. In this way students could be assessed in a low-pressure environment and not be aware they were being assessed. Furthermore, as activities and games had to be consistent with standard Australian classroom pedagogy, assessment using them had to reflect contemporary classroom pedagogy.

The process for lesson development became to select, revise and create an activity or game to teach the required lesson content, build in assessment components that incorporated standards to be achieved, and decide on the students I want to assess in a particular lesson. Over a period of time, each student had to be assessed a number of times. However, it was not necessary to assess a large number of students in any given lesson. An additional task was to observe students when they were engaged in activities and games, and record this as informal feedback. All sources of feedback were analysed, to assess student learning. This enabled me to determine which assessment components worked best, how and why they worked, and which were less effective. Throughout this study, I had to design and develop a range of lesson plans that included activities and games that could be used to promote the learning of Mandarin and at the same time, assess student learning and promote more effective student learning.

To sum up, the overall goal of this study was to improve student learning of Mandarin. The four specific objectives of the study extended beyond this to include the learning of the teacher-researcher. Firstly, I, the teacher-researcher, had to learn how to become a researcher. Secondly, I had to learn how to become a better teacher. Thirdly, I had to learn how to embed assessment in lesson activities and games to enhance student learning. Finally, I had to use research to inform my teaching. I had to learn how to teach more effectively and efficiently by learning how to integrate assessment into lessons so that teaching time was not used for assessment which did not contribute to student learning.
1.4 Significance of the research

This study developed a series of lessons that use activities and games to teach Mandarin. The lessons embedded assessment strategies and used interactive approaches to teaching and learning. Therefore, this study will have benefited students and teachers at the school participating in the study, as well as future students of teachers who may use the lessons developed for their teaching. There is also the potential for the education community as a whole will also benefit not just from access to a series of lessons that integrate assessment but from an evaluation of the effectiveness of embedded assessment in promoting learning. I benefited because, as a volunteer teacher-researcher, I learnt how to teach more effectively while learning how to conduct research. Chinese teachers and students will benefit because I will take back to China what I have learnt and implement it there.

1.4.1 Significance for schools and students

The main reason for the Chinese ROSETE Program, and why I came to Australia, was because NSW DET (WSR) had a vision to equip NSW public school students with the language and cultural skills to communicate with the world’s fastest growing economic power (Chinese Language Lesson Begins, 2008). Consequently, Australia and China as economic and cultural entities will both benefit from this study as the cultural understandings between them will increase. The purpose of this program is for Australian students to learn Mandarin, develop an interest in China and maintain that interest. Students will benefit greatly from a ‘learning by playing’ or ‘learning by doing’ view of teaching and learning. Consequently, this study will produce a series of lessons to teach Mandarin using activities and games in which assessment tasks are embedded and these lesson plans will be a resource for all teachers of Mandarin.

1.4.2 Significance for the wider educational community

Students have become more disengaged with learning and school (Morse, Christenson & Lehr, 2004). In an attempt to re-engage students, teachers can use
activities and games to provide an atmosphere of enjoyment for students and to help them feel that learning is interesting and worthwhile. However, some policy-makers and educators have expressed the concern that activities and games take precious learning time and therefore, the benefits achieved are not worth the cost in time. It has been claimed that activities and games dilute the curriculum. The main concern in teaching and learning is to rigorously follow the prescribed academic curriculum, which occupies a privileged position. Despite research indicating that activities and games are effective in promoting teaching and learning, activities and games are perceived as unable to fulfil the role of reinforcing the curriculum. Rather, they are perceived as increasing the amount of content in the curriculum. Therefore, in recent years, activities and games have been sidelined. However, this movement does not address the issue of student disengagement.

Without an interest in the learning provided in school, more and more students become bored and attracted by the tempting world outside, so they leave school early. Consequently, student disengagement remains a focus for schools and schooling. The whole educational community is faced with the complicated and difficult task of engaging students, particularly those students who require external motivation for learning. At present, policy development is driven by the desire to increase school retention rates and engage students (MCEETYA, 2004; Vickers, 2010). This is the background against which this study took place. As a result, activities and games as a means of increasing student interest in learning are back on the education agenda, with formative assessment strategies being cited as a way to improve learning outcomes (Black & Wiliam, 1998a). In this context, formative assessment is increasingly curriculum-embedded, thus reinforcing the curriculum. In addition, although once viewed as external to teaching and learning, activities and games are now becoming internalised. They are now viewed as part of the curriculum, and the time they occupy has become legitimised.

This research not only developed a series of lessons that incorporated assessment, it evaluated the effectiveness of the embedded assessment in promoting learning. In other words, the study has provided evidence about the effectiveness of embedded assessment as a teaching strategy. Thus the wider education community will gain insights into how to employ assessment as a strategy to promote student learning
more effectively. Overall, the assessment-embedded activities and games serve two main purposes: to engage students in learning and to promote student learning in its own right.

1.4.3 Significance for volunteer teachers
The Chinese ROSETE Program has a five-year life, with approximately 10 graduate volunteer teacher-researchers teaching Mandarin in the Western Sydney Region each year. Most Volunteer Teacher-Researchers (VTRs) share a similar background, with no or little experience as a teacher. Throughout the project, VTRs share a common use of research as a way of learning how to improve their teaching. Eventually, this body of knowledge builds as a collective whole. Consequently, not only has this project helped current VTRs, it will help future VTRs to teach and assess their students more effectively. It will contribute to the ‘collective whole’ and inform the developing area of research-based teacher education. This is particularly important, as this area of educational knowledge develops in the evolving context of international as opposed to domestic teacher education.

1.4.4 Significance for Chinese education
Chinese teachers, parents and even students are prejudiced against activities and games being used as learning strategies. The idea of using them as a means to assess student learning would be even more difficult to accept. In practice, many Chinese people regard activities and games as a way to relax. This study will help Chinese students, teachers and schools to rethink their position, and to develop a comprehensive view of how activities and games can be used to promote and assess student learning. This will contribute to the development of a new learning and assessment culture in Chinese schools.

Students may then be offered a different way to promote their learning in addition to lectures, reading, reciting and writing. Students may experience a greater diversity of learning environments, from which to select those that best suit them. Activities and games may become a ‘breath of fresh air’ in the stifling learning atmosphere of Chinese classrooms. They could, potentially, help alleviate the pressure and burden
placed on many students. With increased interest and engagement in learning, provided by activities and games, students may be able to learn in a more pleasant and engaging classroom environment, and so concentrate on learning. Most importantly, student learning may move towards becoming part of their unconscious or everyday learning experiences, as they will become more reflective of how they learn in everyday life. In addition, the different methods of assessment may alleviate student fear of assessment, since there will be less reliance on tests. Student learning will incorporate assessment, so students will gain insights into their own strengths and weaknesses and begin to accept more responsibility for their learning and development as students in life-long educational experiences.

As the saying goes, ‘if mama ain’t happy, ain’t nobody happy’. This is true with teaching. The joy that radiates from students as they engage with learning activities and games helps teachers engage with and enjoy their teaching. The happier teachers become, the more passion they will have for teaching. Passion leads to teacher engagement and effectiveness in teaching (Wu Ting, 2010). The more effective the teaching, the more students will learn. When teachers are happy teaching, students will be excited about their learning, and learning will be promoted. Moreover, provided with an alternative form of assessment, teachers can more effectively assess student learning and adjust their teaching. Since students can be assessed in a low-pressure environment, their learning will be reflected in their performance, instead of being distorted by the negative contexts associated with tests. Therefore, teachers can take advantage of the authentic feedback on student learning, reflect on their teaching and adjust it if necessary. Furthermore, inspired by this method of assessment, teachers can devise more innovative and creative forms of assessment. Innovative practices may then transfer to other areas, and teachers may learn to be more innovative and creative across the full spectrum of their teaching.

The Ministry of Education in China (MoE) is attempting to reduce the burden of study on students, and especially to liberate students from tests. In its policy, the MoE states that “reform of [the] assessment and examination system is the key to promoting ‘quality-based education’” (Han & Yang, 2001, p. 8). However, there is a long way to go before the MoE reaches its goal. Education assessment in China is still “in the shadow of examination-oriented education” (Han & Yang, 2001, p. 9).
This research – using activities and games as teaching strategies and integrating assessment – could make a significant contribution to the MoE’s commitment in this area. Specifically, a series of lessons that use activities to teach Mandarin, embed assessment and employ student-centred teaching approaches, as well as the teaching and learning perspective that accompany them, will contribute to this process. Chinese central education authorities are actively encouraging the use of student-centred teaching approaches, especially when teaching English as a foreign language in China. In schools, the emphasis is on teaching English as part of ‘quality education’, which involves reforming and simplifying the curriculum, lessening the burden of homework and examinations on students by introducing continuous assessment (Jin & Cortazzi, 2006, p. 14).

1.5 Overview of the methodology

The purpose of this study was to investigate the effectiveness of classroom activities and games integrated with assessment strategies for primary school Mandarin learners. To achieve this, changes in student performance as a result of formative assessment and feedback were monitored. This information was then compared with test scores. Although it has been argued, and will continue to be argued, that summative assessment, in the form of test scores, is not a desirable form of assessment, it was and still is an expectation at the school in which this study was conducted. Comparisons of the summative assessment results between the experimental and control groups were used to determine whether formative assessment was an effective strategy for learning Mandarin. Therefore, a qualitative methodology of action research that employed a quasi-experimental design and incorporated an element of quantitative research was employed.

Data was collected from two sets of paired classes which had Mandarin lessons every second week. Both classes in each pair were taught Mandarin using a range of activities and games. The intervention involved a control class in each pair being taught Mandarin using activities and games without embedded assessment as part of the activities and games. The experimental class in each pair experienced the same activities and games. However, assessment strategies were integrated into each
activity and/or game. The findings of the control and experimental groups were compared. Both the control and experimental groups followed two-weekly iterations throughout the action research process. Every two weeks a lesson with activities and/or games was prepared and taught. During each lesson, student feedback in the form of assessment was observed and recorded for each experimental class, while students in control classes were provided with feedback as assessment.

After each lesson, discussions involving the classroom teacher were conducted, to obtain data about the relative success of the activities and games for both the experimental and control classes and, in the case of the experimental class, the ability of assessment to promote learning. These data were used as the basis for reflection, with thoughts and conclusions being brought together and recorded in a reflective diary so they could be incorporated into the following lesson. At the end of 16 weeks of teaching and data collection, a summative test was given to the control and experimental classes to compare student learning of Mandarin. Students and classroom teachers from both groups were interviewed, to record their views about the activities and games and, in the case of the experimental classes, assessment.

1.6 Scope and limitations

This research is qualitative in nature. The researcher is cognisant of the limitations on the generalisability and validity of the study findings.

1. The findings of this research are not able to be directly and simply applied to other schools and teachers, because of local and cultural variation. The unique contextual elements – a primary school in the Western Sydney Region, NSW, and a volunteer teacher using her second language teaching Mandarin, render the research results less generalisable to other schools and teachers.

2. This research was conducted in actual classrooms, a natural setting, and used a quasi-experimental design. Therefore, it is acknowledged that this study ran the risk of having a number of variables affecting student performance, due to the variances in student demographic backgrounds, previous experience and other,
less dominant yet important factors. Although the variables were controlled and minimised as much as possible, they could not be eliminated. These limiting factors will therefore have had an impact on the validity and generalisability of the study.

1.7 Outline of the thesis

Chapter 1 has presented an introduction to this study. It described the researcher’s background and stated the research questions and subsidiary questions. It discussed the significance of the study and associated limitations. Additionally, it has presented a brief overview of the methodology.

Chapter 2 reviews the literature that informed the study. The context is described in terms of how it shaped the design of the study. Assessment is discussed with a view to establishing a theoretical framework. A constructivist perspective of teaching and learning is then presented, to orientate the study in terms of curriculum and pedagogy, which are presented as they interrelate with assessment. During the discussion of curriculum and pedagogy student-centred learning and learning styles are examined as they impact on classroom activities and games. The chapter concludes with a discussion about language teaching and learning and the influence of action research. Throughout the literature review the intention was to establish a theoretical framework to contextualise the study.

Chapter 3 conceptualises the theoretical basis for the methodology and outlines the research design. The mixed methodology that informs the research design is justified in terms of the teacher-as-researcher framework as it is influenced by action research. Data collection is described, discussed and justified, as is the data analysis.

Chapter 4 presents the findings from the data analysis. The data analysis is derived from formative and summative sources. The formative sources include the reflective diary kept by the teacher-researcher, her observations, and the observations of supervising classroom teachers, while the summative sources include teacher and student interviews and student summative test results.
Chapter 5 discusses the study findings and conceptualises them in terms of how they answer the research questions. Throughout this process, findings are integrated and discussed in terms of the relevant literature. The discussion attempts to relate findings to theory and to integrate theory and practice.

Chapter 6 discusses the study findings in terms of assessment for both student and teacher learning. It discusses the implications of the study findings in terms of assessment, curriculum, pedagogy and research. In so doing, the discussion extends the theoretical framework that was established as the basis for this study.
Chapter 2: Review of Literature

2.1 Introduction

The main features of a literature review include analysing literature from the philosophical underpinnings of the study, confining the literature to the specific questions to be answered by the study, and critically examining the assumptions and currency of critical texts (Hart, 1998; Boote & Baile, 2005). A good literature review should also construct a debate or develop an argument within the field, examining alternatives and positioning ways in which the research question can be viewed (Becker, 1986; Boote & Baile, 2005). This review examines the literature in the field of student classroom assessment. The current debate in this field is around the relative merits of summative and formative assessment and the contribution that assessment makes to student learning. The methodological context of the study is an important consideration, because assessment research has been dominated by quantitative analysis, although qualitative methodologies are now being employed.

The research in the body of the thesis is directed toward investigating whether assessment strategies can be embedded in classroom activities and games to promote the learning of Mandarin more effectively. The relationship between assessment practices and student learning is given prominence. This review explores the methodological context of the study (2.2); assessment (2.3); constructivism (2.4); student-centred learning (2.5); learning styles (2.6); classroom activities and games (2.7); language teaching and learning (2.8); curriculum (2.9); the implications of a beginning teacher conducting research (2.10) and action research (2.11) to present the conceptual framework for the study (2.12) followed by a conclusion (2.13).

2.2 The methodological context of the study

A positivist view of research posits that authentic knowledge is based on sense and experience (Creswell, 2009). Positivism is a deterministic philosophy in which ‘causes’ probably determine ‘effects’ or outcomes (Creswell, 2009). It is assumed that all human behaviours and events can be explained in an orderly way using
empirical sciences (Mills, 2011). There is usually an hypothesis and a predetermined outcome stated. By means of observation and experiment the predetermined outcome is either supported or refuted. Pine (2009) indicates that positivism emphasises prediction, control, and generalisation through quantitative methodologies. Positivism pursues objectivity and absolute truth. Therefore, science must and can be conducted in a way that is value free (Bryman, 2009). Flick (2009) concludes that the purpose of using the positivist approach is: “to clearly isolate causes and effects, to properly operationalise theoretical relations, to measure and to quantify phenomena, to create research designs allowing the generalisation of findings, and to formulate general laws” (p. 13). The widespread and successful employment of the positivist paradigm in the natural sciences has extended itself to the social sciences. There is a common belief that natural and social sciences should and can apply the same principles to conducting research (Flick, 2009).

Despite the dominance of the positivist paradigm in both the natural and social sciences, it has been vehemently criticised for its application to the study of the social world (Habermas, 1972; 1994; Horkheimer, 1972; Ions, 1977; Beck, 1979; Nesfield-Cookson, 1987; Flick, 2009). The main focus of criticism is the positivist assumption that human behaviour is governed by general, universal laws and characterised by underlying regularities (Cohen, Manion & Morrison, 2007). Yet, human nature is immensely complex and social phenomena are unique, subjective and intangible (Cohen et al., 2007). Consequently, it is almost impossible to predetermine any outcome and it is more dehumanising to quantify any social phenomenon or human behaviour to generate large-scale theories. Moreover, in pursuit of objectivity, the positivist paradigm emphasises detachment from the world (Cohen et al., 2007; Flick, 2009). This detachment ignores the subjective factors that influence or even shape human behaviour and social phenomena. These influences attach meanings to the social world. Excluding these contextual conditions renders understanding of the world difficult. In that case, the idea of a detached and objective observer should be rejected. Positivism is less successful in the social world and the limitation of applying positivism in the social sciences has given rise to the interpretive paradigm.
This study explores the effectiveness of embedded assessment in activities and games to promote student learning of Mandarin in a classroom context. In order to assess the effectiveness of embedded assessment, this study makes use of a quasi-experimental design. Quasi-experiments are more often undertaken than true experiments in educational research. The major difference between quasi-experiments and true experiments is that in the former, the groups are not randomly selected, because they already exist (Cohen et al., 2007). Moreover, possible extraneous variables other than interventions may influence outcomes. Although a positivist research approach is a starting point, this study explores behaviours of students and a teacher-researcher in the context of the existing social setting of classrooms and a school. Consequently, the positivist paradigm alone would face a great number of challenges. Therefore, this study, although it embraces aspects of positivism in terms of a quasi-experiment, is positioned by a real and existing classroom context. Essentially, it is shaped by an interpretive paradigm – a more synergistic paradigm – which can encompass and reflect the complexities of the social world.

Social science embraces the interpretive or qualitative paradigm. The interpretive paradigm is underpinned by relativism, where there are no absolute truths. Truths are interrelated with each other. Based on this notion, the social sciences interpret subjective meanings assigned by participants and situations to generate theory (Carr & Kemmis, 1983; Cohen et al., 2007). Cohen et al. (2007) describe the central endeavour of interpretive research as an attempt to understand the subjective world of human experience. In contrast to positivist research, the interpretive paradigm respects and accommodates the unique individual. It studies the actions of particular individuals in particular situations. In other words, the interpretive approach understands and interprets the world from the perspective of actors (Cohen et al., 2007).

Actors attach their own subjective views to their behaviours. These subjective views provide behaviours with profound meanings. Consequently, in order to diagnose and understand social reality and human actions, “the actor’s motives, intentions or purposes in performing the action” need to be carefully studied (Flick, 2009, p. 88). Thus the interpretive paradigm, in contrast to its positivist counterpart, is subjective
and value-bound. Moreover, the action is a product of contextual factors. The embedded cultures, histories and environments make each action particular and meaningful. The interpretations of the world around the actor elucidate the intelligibility of the action (Carr & Kemmis, 1986; Cohen et al., 2007). Interpretive research examines the contextual reality to gain insights into the specific context and the actions within local contexts. Interpretive research uses various narrative and descriptive approaches and methods to collect data, to understand the way things are and what they mean from the perspectives of participants in the study (Flick, 2009; Mills, 2011). Theories are empirically grounded, in an attempt to generate accurate descriptions of the world (Brookfield, 2005).

The purpose of this study is to discover the effectiveness of embedded or formative assessment in promoting student learning. It examines the experience of the teacher-researcher and students in teaching and learning Mandarin. It studies a specific context – the classrooms in a primary school. It employs interviews, observations, a reflective journal and feedback sheets to access the subjective views of students, the teacher-researcher and relevant teachers. It explicates the specific factors which result in the actions of students and the teacher-researcher. These interpretations, in turn, generate theory.

This study investigates whether embedded assessment is more effective in improving student learning outcomes in a classroom context than the more common model of teaching followed by assessment at the end of teaching. Embedded assessment is a different assessment practice. The focus of the study is to investigate and examine the behaviours of students and the teacher-researcher in the classroom context. It takes into account the perspectives of the teacher-researcher and the students to understand and interpret actions in this particular context. A variety of qualitative approaches were adopted to collect data and generate theory. Despite the use of the interpretive paradigm for this study, one question needs to be specifically addressed – how to determine whether embedded assessment is effective or not. Subjective interpretive approaches may not be the best way to measure the effectiveness of assessment. Consequently, the objective positivist paradigm is borrowed. By means of a quasi-experimental design where experimental groups are compared with control groups directly, the effectiveness of assessment can be determined.
2.3 Assessment

Some of the early literature in the field of assessment did not distinguish clearly, let alone conceptually, between assessment and evaluation. Often the two terms were used interchangeably. A contemporary view of assessment is that it provides information or evidence about learning (Anglo & Cross, 1993) while evaluation is a judgment made using this information or evidence (Kizlik, 2011). However, another difficulty was encountered when reviewing the literature on assessment. Specifically, this researcher could not find a cohesive and well articulated theoretical framework that positioned the field of assessment. Consequently, it was decided to first understand the meaning that the literature ascribed to the term ‘assessment’ and then follow its historical development, in an attempt to position the study within an appropriate theoretical framework. Rather than describing historical developments, emphasis was placed on shifts in conceptualising assessment. As a result, assessment practices were presented as paradigm shifts rather than detailed descriptions. Although these shifts will be presented using a relatively linear timeframe, it should be noted that any complex phenomenon, such as assessment, would not evolve strictly step by step. Rather, conceptual changes would arise and then subside, only to surface again in a different form. What is presented in this review is a summary of paradigm shifts as they emerged as the dominant discourse.

In the absence of a discrete theoretical framework for assessment as such, the work of Guba and Lincoln (1989) was used as a starting point. Guba and Lincoln (1989) used an historical perspective to divide the evaluation or assessment of the merit of research into four eras. Although their work was based on assessing the merit of research, their systematic approach parallels the historical shifts in assessment more generally. It provides a backdrop against which changes in thinking about assessment practices can be charted. It facilitates a way of standing back and viewing changes in assessment practices so that fundamental shifts can be detected not only for assessment practices but also in terms of the ways learning is viewed. Assessment and learning are inextricably linked (Hargreaves, 1997), with changes in assessment practices reflecting changes in the ways that learning is viewed, and vice versa.
Consequently, the changing views about both classroom learning and assessment are charted in this section. In an attempt to consider assessment in terms of theoretical frameworks, shifts in emphasis are discussed in terms of frameworks that facilitate comparisons between assessment and learning. The frameworks used were selected because they maximised the fit between assessment and learning and were within the experience of this researcher. Other frameworks could have been selected but at the time of selection, were less well known to this researcher.

The first era of assessment was known as the era of measurement, which lasted up until World War I (Guba & Lincoln, 1989). Students were characterised as ‘objects’, and ‘tests’ were used to ascertain student mastery of content. This era was consistent with the positivist tradition and typified by control, management and prediction (Grundy, 1995). It fits within the ‘technical interest’ component of Habermas’ (1972) theory of ‘knowledge constitutive interests’. Habermas believed that all knowledge is constituted through one of three cognitive interests. Each of these three interests, the technical, the practical, and the emancipatory, implies specific views of learning. ‘Technical interest’, like Guba and Lincoln’s (1989) pre World War 1 era of assessment, is outcomes-oriented and objectifies the student. Knowledge and learning are viewed from within an empirical framework where evidence is tangible and obtained under controlled conditions from within the physical world (Butler, 1997; Ray, 1999).

Doll (1993) examined changes in assessment practices in terms of philosophical thought. He believed that teaching in the era of measurement was based on a ‘closed set’ model. This model assumes that epistemology, reality and transmissive pedagogy were stable. The notion of a ‘closed set’ did not imply that knowledge should be constrained, but rather that the expansion and exposition of knowledge should be in the hands of experts who were conversant with scientific methods. The implication was that assessment practices were ‘scientific’ measures that could be used to determine how much a student had learnt.

According to Guba and Lincoln (1989), tests have been used for hundreds of years. The earliest of these tests were designed to measure content mastery. Tests were usually given orally, one student at a time. If tests were written, the questions
required essay type responses. This process was both time-consuming and subjective. As the number of people being educated increased after World War 1, such a system had to be modified to accommodate an increase in student numbers and increased efficiency and objectivity. Consequently, the new and relatively rigorous methods of science were used to solve the problem. Guba and Lincoln (1989) refer to this second era as the era of description. Assessment practices became objective and could be used to describe groups of students. Tests and grades did not disappear from classrooms. Instead, they evolved into objective, scientific measures that could be delivered to large numbers of students to separate them into different ability groups.

Tests were developed to measure intelligence and compare different groups of people. The method of devising and delivering these tests was scientific, objective, controlled, reproducible and statistical. From these tests, a score could be calculated, which became known as the intelligence quotient (IQ) (Gould, 1981). Assessing and ranking students using objective tests became the distinguishing feature of the era of description. However, although this time was dominated by objective tests, characteristics of the previous paradigm were also present. Control was a significant feature, as was the ‘technical interest’ component of Habermas’ (1972) theory of ‘knowledge constitutive interests’.

Early in the post-Sputnik period, the early 1960s, the third era of assessment began. The distinguishing feature of this era was the development of standards against which assessments were compared so that judgements could be made (Guba & Lincoln, 1989). Standards-based assessment is aligned to outcome-based education or a performance-based educational philosophy (Malan, 2000). A significant implication of standards-based assessment is that the curriculum is also aligned to the standards. Criteria are established that indicate the degree to which each standard is met. A score is calculated and compared to benchmarks, rather than to norm-referencing achievement (Slavin, 2008). Although assessing against standards rather than norm-referencing achievement is a significantly different approach to assessment, assessment procedures themselves are still within closed systems that require specialist assessors (Malan, 2000), with an emphasis on control, and are nested within the ‘technical interest’ component of Habermas’ (1972) theory of ‘knowledge constitutive interests’.
Although all three eras of assessment, so far discussed, represent different paradigms in assessment practices, they share the common features of objectifying students in a system that is controlled and ‘technical’. Assessment is invested in and controlled by experts in assessment. Essentially, the learner is passive in the assessment process. Assessment occurs outside the learning experience. It is not integrated into the classroom learning environment. Instead, time is allocated for assessment in parallel with or in addition to classroom learning. Students view assessment as something that has its own particular rule system and place, separated from ‘normal’ classroom time and practice. Students often prepare for assessment in an entirely different way to the way they prepare for class, and in doing so, develop an entirely different skill set. Consequently, curriculum is not integrated with assessment and although some teachers may teach skills to help students with assessment, classroom pedagogy is not integrated with assessment. There is little overlap of assessment with curriculum and pedagogy.

The 1970s saw the initial appearance of views of learning, pedagogy and assessment techniques that were to eventually typify the fourth era of assessment as ‘responsive constructivist’. This era is based on a constructivist paradigm and an open system, with an emphasis on student empowerment. From the perspective of philosophical thought Doll (1993) argued that the ‘responsive constructivist’ era emphasised open, dynamic systems that presented students with an opportunity for growth and transformation. The significant paradigm shift was that assessment processes considered and incorporated a student perspective.

In terms of Habermas’ (1972) theory of ‘knowledge constitutive interests’, the ‘responsive constructivist’ era fits across ‘practical’ and ‘emancipatory’ cognitive interests. ‘Practical cognitive interest’ is informed by a view of learning where knowledge is not gained through technical control and manipulation (Ray, 1999) but from knowledge that clarifies and promotes student understandings. Consequently, assessment practices emphasise the understandings students have from their engagement with learning environments (Malan, 2000). The ‘emancipatory cognitive interest’ is set within the broad realm of social critical theory and claims that knowledge and concepts cannot be fully understood unless and until learners
undertake rational evaluations in terms of how what is being learnt, impacts them both personally, and from a more general community or social perspective (Ray, 1999). In this way practical and emancipatory interests are seen as related, with the emancipatory interest evolving from the practical. The practical interest emphasises understanding, while the emancipatory interest emphasises the need for critical investigation and reflection to inform developing understandings. The ‘responsive constructivist’ era of assessment fits within the ‘practical’ and ‘emancipatory’ interests.

Within the ‘responsive constructivist’ paradigm, there is a reduction in absolutes, control and certainty. Objective standards also fade and the emphasis moves to promoting student learning. Relativity replaces certainty, and student empowerment is substituted for control. However, the Guba and Lincoln (1989) view of a ‘responsive constructivist’ approach to assessment attempts to retain rigour by employing a well defined, iterative and hermeneutic methodology. Essentially, Guba and Lincoln believe that the hermeneutic process between teacher and learner is implicit and will act as its own quality control to achieve student improvement and growth. From a more philosophical perspective Doll (1993) views such a process as open, iterative and dynamic, in an attempt to respond to learner needs. Doll (1993) suggests that such a view of learning will be based on richness, recursion, relations and rigor.

Essentially, the learner becomes both central to and active in the assessment process. Assessment occurs inside the learning environment. It is integrated into classroom learning activities and experiences. Classroom learning experiences incorporate an assessment component. Students view assessment seamlessly with ‘normal’ classroom practice. Consequently, assessment is integrated with both the curriculum and classroom pedagogy. Assessment, curriculum and pedagogy meld seamlessly. The teacher and learner share responsibility for student learning. This description becomes the basis of the theoretical framework for this study. The theoretical framework emphasises a close connection between assessment and learning. The study took place where curriculum, pedagogy and assessment intersected and where the teacher and student shared responsibility for student assessment and learning (see
Figure 2.1). Refinements to this model will be added as the literature specifically related to assessment and learning is explored further.

![Venn Diagram](image)

**Figure 2.1 Integrating curriculum, pedagogy and assessment**

Figure 2.1 positions this study. The three interconnecting circles represent the three interacting areas of curriculum, pedagogy and assessment. These components are discussed in the following sections to show how they form the theoretical basis for this study.

The interactions and syntheses of these three areas contextualise this study. Curriculum and pedagogy are closely linked, as they determine the content of student learning and how teachers facilitate learning. Assessment functions to gather evidence about the effectiveness of curriculum and pedagogy in promoting student learning. Assessment practice can then be used to inform possible changes in curriculum and/or pedagogy. The model indicates that to understand what and how
students learn and how teachers teach, curriculum, pedagogy and assessment need to inform each other.

2.3.1 Assessment and learning

Researchers have examined the relationship between assessment and learning (Hargreaves, 1997; Holt & Willard-Holt, 2000; Inbar-Lourie & Donitsa-Schmidt, 2009, Leung & Scott, 2009; Scarino & Liddicoat, 2009). Wehlburg (2010, p. 169) describes assessment “as a tool for gathering evidence of student learning in order to transform teaching and enhance the learning process”. Inbar-Lourie and Donitsa-Schmidt (2009, p. 188) interpret assessment “as an ongoing and varied process integrated with learning, with students actively involved in the different stages of the assessment process”. Leung and Scott (2009) argue that the function of assessment should be as a component of learning. They cite Hayward and Hedge (2005, p. 61), who assert that, “assessment must be integral to the processes of learning and teaching”. Scarino and Liddicoat (2009) also state that assessment is an integral part of student learning:

Assessment in any educational context and at any level is integral to student learning. It involves making considered judgements about what students have learned and understood, how they are learning, and where they are along their personal learning trajectory (p. 68).

Researchers have described inseparable relationships between assessment and learning. Nevertheless, the different relationships between assessment and learning have resulted in two clearly distinguishable types of assessment.

2.3.2 Two types of assessment

The literature on assessment and learning identifies two types of relationship: assessment of learning and assessment for learning (Sadler, 1989; Stiggins, 2002). Both relationships are essential components of the overall learning process, but the former is well established and dominates the latter. Effectively, assessment for learning has only recently emerged as a concept (Stiggins, 2002). Assessment of learning is well understood and is currently used extensively by teachers, while assessment for learning is undervalued, underutilised and still undergoing conceptual
development (Stiggins, 2002). Stiggins (2002) argues that the crucial distinction between assessment of learning and assessment for learning is between assessment to determine the status of learning and assessment to promote greater learning. Formative assessment is a strategy that promotes assessment for learning. Assessment of learning, when compared with assessment for learning, is like comparing summative assessment with formative assessment. However, as Sadler (1989, p. 120) clarifies, “the primary distinction between formative and summative assessment relates to purpose and effect, not to timing”.

2.3.2.1 Assessment of learning and summative assessment

Summative assessment primarily embodies assessment of learning. It is a strategy to find out what students have learnt. Summative assessment is end-of-unit or end-of-course data gathering for the purpose of making judgements about overall student learning and progress (Scarino & Liddicoat, 2009). It is designed to measure achievement of outcomes and/or mastery of content (Cohen et al., 2007).

Summative assessment dominates the world of assessment. Its main strength is accountability. It serves the purposes of accountability by ranking or certifying competence (Black & Jones, 2006). Wehlburg (2010) claims that assessment has been tied to accountability in order to demonstrate performance to stakeholders. Researchers (Stiggins, 2002; Heritage, 2007) have found that the use of assessment of learning has promoted extreme practices. They assert that summative assessment is now used to competitively evaluate schools, teachers and students. However, summative assessment per se has a number of limitations:

- It only provides a snapshot of student learning at a particular time in the learning. It is a measure of student achievement at the time of assessment but does not provide a measure of student progress or development over a period of time (Pelligrino, 2001), and lacks the ability to assess learning progress. Learning and assessment are inextricably linked (Hargreaves, 1997). Learning is ‘not an all or nothing’ process but is cumulative. Since learning is continuous, assessment should take place continuously as well. It needs to be a ‘moving picture’ (Heritage, 2007). Because both teachers and students do
not know how learning is progressing, they are ill-informed as to how to promote even greater learning.

- It puts a great deal of pressure on students. Summative assessment is usually in the form of examinations. Students are constantly being examined. Moreover, these examinations are high-stake experiences as students either do well or they don’t, with a single examination making that determination.

- It encourages surface learning rather than deep learning. Entwistle and Entwistle (1991) suggest that there are two types of learning. One is surface learning, which is concerned with the reproduction of information. The other is deep learning, and involves the understanding and transformation of information. Hargreaves (1997, p. 403) agrees, claiming “(a)ssessment shapes student learning in both positive and negative directions. At worst, assessment methods force students into surface learning; facts are quickly acquired to meet examination pressures and just as quickly forgotten”. Consequently, summative assessment can insulate students from the main purpose of learning, which is to understand the world around them.

- It can function negatively as motivation for learning. Assessment should be viewed as part of the learning process and therefore should be central in motivating student learning. Stiggins (2002) suggests that many policymakers, school leaders and teachers believe that summative assessment can be ‘a great intimidator’ of students and so can negatively impact learning. Despite the assertion that summative assessment promotes student learning by setting higher standards and implementing more high-stakes testing, summative assessment is now undergoing a reality check, with the suggestion that it can have the reverse effect (Stiggins, 2002).

- It is time-consuming and often undertaken for external mandates, so the process is often seen as a bureaucratic annoyance (Wehlburg, 2010). Schools need to interrupt normal teaching schedules to provide time for assessment.

These limitations of summative assessment have negative impacts on students and their learning. Summative assessment is limited in its ability to truly reflect the consistency of student learning. As an external component of student learning, it imposes a great deal of pressure on students. These limitations may function to
restrict students from exploring deeper and more meaningful learning and even to ‘turn students off’ learning altogether. Furthermore, summative assessment may take the form of an ‘add-on’, and occupy limited teaching and learning time. Consequently, there is a need for change. Assessment practices need to be more internally consistent and efficient. They need to provide an environment in which students are given the opportunity to participate in and promote their own learning.

It is in this context that this study takes place. It explores a change in assessment practice that attempts to remedy the perceived deficiencies in assessment of learning (summative assessment). It is an attempt to reposition assessment as a seamlessly integrated and ‘natural’ component of learning, as it is embedded in classroom activities and games. In this view of assessment, students experience learning support from the teacher in the form of feedback, and use this support to help them promote and take more responsibility for, their own learning. This form of assessment is essentially for a different purpose, and is known as assessment for learning.

2.3.2.2 Assessment for learning and formative assessment

Assessment for learning has gained more and more attention in the last decade. Black and Jones (2006) describe assessment for learning as finding out what students know, what they do not know and more importantly what they partly know, so that teachers can help them realise this and then guide them to fuller understandings. McDowell et al. (2006) identify six purposes of assessment for learning. It can:

- emphasise authenticity and complexity in the content and methods of assessment rather than the reproduction of knowledge and reductive assessment;
- use high-stake summative assessment rigorously but sparingly, rather than as the main driver for learning;
- offer students extensive opportunities to engage in the kinds of tasks that develop and demonstrate their learning, thus building their confidence and capabilities before they are summatively assessed;
- provide rich feedback derived from formal mechanisms;
use rich informal feedback, ideally providing a continuous flow on ‘how they are doing’; and

- develop students’ abilities to direct their own learning, evaluate their own progress and attainments and support the learning of others.

These purposes are the main features of assessment for learning, and they consistently and accurately reflect student learning progress, create a safe learning environment for students, and provide students with feedback to help them facilitate and take increased responsibility for, their learning. Assessment for learning recognises the inherent problems and limitations associated with learning and makes an attempt to overcome them.

In this study, assessment took place within Mandarin lessons. Assessment is integrated with classroom activities and games and helps create a secure classroom environment for students to demonstrate their learning of Mandarin. While students undertake these activities and games, the teacher is able to assess students and provide feedback to them. Students then use this feedback to improve their Mandarin.

Despite the claim that assessment for learning does not equate with formative assessment because it is “about far more than testing more frequently or providing teachers with evidence so that they revise instruction” (Stiggins, 2002, p. 1) most researchers view formative assessment as assessment for learning. The Centre for Educational Research and Innovation (CERI) has defined formative assessment as “frequent, interactive assessments of student progress and understanding to identify learning needs and adjust teaching appropriately” (OECD, 2005, p.21).

Black and Wiliam (2009) focus on feedback as a way to better inform participants to make adjustments in their learning:

Practice in a classroom is formative to the extent that evidence about student achievement is elicited, interpreted, and used by teachers, learners, or their peers, to make decisions about the next steps in instruction that are likely to be better, or better founded, than the
decisions they would have taken in the absence of the evidence that was elicited (p. 9).

Careful scrutiny of the literature recognises two different emphases, when defining formative assessment. Some researchers focus on the change to teaching that evidence from formative assessment provides (Stiggins, 2002; Black & Jones, 2006; Elwood, 2006). For example, teachers are able to adjust their teaching pace and style using the more frequent information provided about learners, so that difficulties or obstacles can be identified and tackled (Black, 2004). Alternatively, other researchers emphasise the feedback to students (Sadler, 1989; Nicol & Macfarlane-Dick, 2006; Irons, 2008; Popham, 2008; Black & Wiliam, 2009) so that students connect with and understand the purpose of their learning, where they are in relation to this purpose and how it can be achieved (Taras, 2002; Ziebarth et al., 2009). This view not only suggests that students are actively involved in assessment processes but also implies that students have been taught to understand the learning process and their role in it.

Despite different emphases and definitions, there is agreement on the ultimate goal of formative assessment, which is to make learning more effective (Black, 2004). In fact, the term ‘formative’ in formative assessment indicates that it forms or shapes learning (Scarino & Liddicoat, 2009). Essentially, adjustments in teaching and learning are based on feedback generated as part of formative processes.

This study employs a definition of formative assessment as outlined by Black and Wiliam (2009), as stated above. This definition fits the study in relation to the focus on feedback. Students perceive and respond to feedback via formative assessment. This practice empowers students to be at the centre of the assessment process and to take responsibility for their own learning. However, it stops short of teaching students to understand the learning process and their role in it. This was a pragmatic decision based on the time available for teaching as part of the study. A full explanation of this decision is provided as part of the methodology.
2.3.3 Feedback in formative assessment

There is consensus among researchers that feedback is a key component of formative assessment (Sadler, 1989; Taras, 2002; Black & Jones, 2006; Popham, 2008; Scarino & Liddicoat, 2009). Feedback is “information about how the student’s present state [of learning and performance] relates to . . . goals and standards” (Nicol & Macfarlane-Dick, 2006, p. 200). In his seminal work, Sadler worked from Ramaprasad’s (1983) view of feedback to highlight the function of feedback in formative assessment. He said that the “information about the gap between actual and reference levels is considered as feedback only when it is used to alter the gap” (1989, p. 121). Sadler (1989) established the feedback loop as a fundamental component of formative assessment by suggesting that learners should identify their actual level of performance, compare it with the desired level and then act to close the gap. Bridging the gap is the most important step in closing the feedback loop. Feedback serves the needs of teachers and students (Sadler, 1989). Teachers need feedback to “adjust their ongoing instructional activities’ and students need it to ‘adjust the procedures they’re currently using to try to learn whatever they’re trying to learn” (Popham, 2008, p. 5). These feedback functions reflect the different emphases of formative assessment.

Broadly speaking, there are two kinds of feedback to students: internal feedback and external feedback (Sadler, 1987; Nicol & Macfarlane-Dick, 2006). Students generate internal feedback when they monitor their engagement with learning activities and tasks, and assess progress towards goals while actively interpreting external feedback in relation to their internal goals (Nicol & Macfarlane-Dick, 2006). Internal feedback is related to self-assessment. Self-assessment is the ultimate goal of formative assessment. It provides students with an opportunity to take an active role in the assessment process (Nicol & Macfarlane-Dick, 2006; Inbar-Lourie & Donitsa-Schmidt, 2009). Black and Jones (2006) suggest that self-assessment:

. . . requires the pupil to have a clear picture of the learning targets, an understanding of what would count as good quality work that meets them, an idea of where one stands in relation to those targets and a means to achieve them (p. 8).
Black and Jones (2006) argue that during the process of self-assessment, students develop mega-cognitive skills that provide them with the ability to oversee and direct their own learning, so that they become more committed, responsible and effective learners. Self-assessment empowers students to take responsibility for their own learning. Moreover, the skills developed while self-assessing, prepare students for learning throughout life (Boud, 2006).

Researchers (Stiggins, 2002; Black & Jones, 2006) examined the correlation between self-assessment and student learning and found it to be positive. Stiggins (2002) suggests that teachers can facilitate student learning by engaging students in regular self-assessment when standards are held constant, so students can watch themselves grow over time and feel in control of their success. Despite the strengths of self-assessment however, researchers have found that students have difficulty thinking about their work in terms of a set of goals (Taras, 2002; Black et al., 2004).

External feedback from teachers and peer students can also produce benefits in the learning process. Peer-assessment can be very powerful (Scarino & Liddicoat, 2009). Researchers (Hargreaves, 1997; Nicol & Macfarlane-Dick, 2006; Scarino & Liddicoat, 2009) have explored the advantages of peer-assessment and found that students are more able than teachers to explain newly-learnt knowledge to their classmates. They also found that peer assessment exposes students to alternative perspectives and that students develop the capacity to detach from their work and make judgements that help them appreciate the qualities of their own work. This is because peer assessment requires students to understand criteria, problems and the strengths of their work before they assist others (Hargreaves, 1997; Scarino & Liddicoat, 2009). In addition, peer assessment encourages students to persist and finally, it is sometimes easier for students to accept critique of their work from peers rather than from teachers (Black et al., 2004). Black and Jones (2006) summarised the value of peer-assessment in learning:

With coaching focussed on criteria for quality, pupils can develop awareness of successes and problems in pieces of work and can articulate this in discussion . . . . As pupils assimilate the criteria, they thereby assess their own work with greater clarity. Such practice encourages improvement as pupils begin to see how small changes, or different ways
of approaching parts of the work, can easily raise its quality – and the regular small pushes forward help embed better learning and raise overall attainment (p. 8).

Formative assessment encourages self and peer assessment. It enables students to understand “criteria for quality, problems and strengths of particular pieces of work, how to give and receive feedback, in the context of developing self-awareness as learners” (Scarino & Liddicoat, 2009, p. 70). Consequently, students occupy a central and active role in the entire assessment practice and thereby take control of their learning.

Sadler (1998) outlined three components of typical teacher feedback. These are that the teacher:

- attends to the learner’s production;
- appraises this against some background, or reference framework; and
- makes an explicit response.

Teacher feedback was found to be most useful when the teacher set a standard, made the student aware of that standard and helped them understand the gap between the standard and their performance, and then helped the student to take action to close that gap, thereby making learning more efficient (Sadler, 1989; Black & Wiliam, 1998b; Sadler, 1998; Stiggins, 2002; Taras, 2002; Black & Jones, 2006). The role of the teacher in providing feedback is to mediate between the student and the content to be learnt, while the role of the learner is to identify the difference between their current and the desired level of performance (Black & Wiliam, 1998b; Sadler, 1998). This occurs more effectively when teachers know how to build bridges – feedback – between the two sides. Sadler (1998) listed six resources the teacher needs to provide for effective feedback:

- superior knowledge about the content or whatever it is to be learnt;
- a set of attitudes or dispositions towards teaching and learners;
- skill in working out ways to elicit revealing and pertinent responses from learners;
• a deep knowledge of criteria and standards appropriate to the assessment task;
• evaluative skills or expertise in making judgements about student effort on similar tasks in the past; and
• expertise in framing feedback statements from students.

These resources are indicative of useful teacher feedback. Teachers are already relative experts in content. However, they need to learn how to hone their skills to provide feedback to students, which includes elicitation, judgement, evaluation and communication. Teachers become resource people and facilitators who use their knowledge and skills to assist students to use feedback so that they can take more responsibility for their own learning.

This study provided the teacher-researcher with opportunities to acquire these skills as a resource so that she could provide students with effective feedback. In this study, the teacher-researcher was an expert in Mandarin, although, deficient in skills to exercise quality feedback practice. She was learning to attain these necessary resources or skills and become a good teacher, to implement formative assessment effectively during the period of the study. Moreover, throughout the study, the teacher-researcher progressively shifted the responsibility for learning to students.

Nevertheless, the relationship between teacher feedback and student responsibility for learning is challenged by some researchers in higher education (Nicol & Macfarlane-Dick, 2006). Researchers claim that feedback and formative assessment are still controlled by and seen as the responsibility of teachers because “teachers ‘transmit’ feedback messages to students about what is right and wrong in their academic work, about its strengths and weaknesses, and students use this information to make subsequent improvements” (Nicol & Macfarlane-Dick, 2006, p. 200).

Despite this claim, teachers should communicate feedback messages to students in a way that interacts with students, rather than being imposed on them. The process of feedback message reception should be a discourse. Teachers can challenge students to elaborate their meanings, and invite them to reformulate, respond to or build upon the feedback from others in ways that shape their understanding (Scarino & Liddicoat, 2009). After receiving feedback, students actively respond to it by
adjusting their learning performances according to their own needs. Students are in control, make an interpretation of the feedback information, and construct knowledge from it on their own. Teacher feedback is a tool to empower students to assume more responsibility. However, students who were still at primary school had not yet developed the capacity or the skills for self-assessment in this study. It was difficult to teach self-assessment skills to students during the short lesson times, over the limited timeframe of this study. Consequently, for this study, the teacher took some responsibility for generating student learning information (feedback) and communicating it to students in a form that they could easily interpret and assimilate as part of their learning process.

The quality and practice of feedback determines the effectiveness of formative assessment. Consequently, Nicol and Macfarlane-Dick (2006) list seven principles of quality feedback practice for self-assessment that can be applied to all feedback:

- helps clarify what good performance is (goals, criteria, expected standards);
- facilitates the development of self-assessment (reflection) in learning;
- delivers high quality information to students about their learning;
- encourages teacher and peer dialogue around learning;
- encourages positive motivational beliefs and self-esteem;
- provides opportunities to close the gap between current and desired performances; and
- provides information to teachers that can be used to help shape teaching (p. 205).

Effective feedback helps students to reflect on their own learning, understand their goals and realise them. To achieve this, teachers and students establish a series of dialogues to promote learning. This dialogic relationship works on the principle that knowledge is a product of dialogue and communication over an extended period of time (McLaren, 2000; Freire, 2002). Furthermore, feedback is an indicator of student learning so that teachers can adjust their teaching approaches accordingly.

In this study, teacher feedback was provided as a major resource for student learning. The teacher entered into a dialogic relationship with students as they participated in
activities and games. Through dialogue, after elicitation of student performances, the teacher made judgements, pointed out problems and provided a means to achieve expected performance. At times, the teacher may have deviated from the intended dialogue and imposed views unintentionally. This was a consequence of lapsing back to earlier views on assessment and the innate predisposition to draw on past experience. Students then used the feedback provided to improve their learning through interaction with the activities and games and feedback provided by the teacher.

In summary, the quality of feedback is a critical feature in determining the quality of a learning activity (Black & Wiliam, 2006). Three agents – the teacher, the individual learner, and the peer – all play key roles in the learning process.

2.3.4 Practices of formative assessment

There have been a number of attempts to implement formative assessment in different subject disciplines, including foreign languages. For example, in Israel, formative assessment has been used to assist in teaching English as a foreign language (Inbar-Lourie & Donitsa-Schmidt, 2009). Scotland has implemented a program called Assessment is for Learning (Leung & Scott, 2009), which has become part of the assessment process in teaching English as an additional/second language in schools in Scotland as well as in Wales.

The principles of formative assessment are understood and endorsed by teachers. However, although formative assessment has strengths, it is not widely practised (Black & Wiliam, 1998a). The successful implementation of formative assessment is influenced by a number of factors, such as teacher expertise in developing and conducting assessment, the time allocated, parental pressure and so on (Heritage, 2007; Inbar-Lourie & Donitsa-Schmidt, 2009; Leung & Scott, 2009).

Although formative assessment is internal to teaching and learning, it requires a greater amount of time. However, time is a scarce commodity in teaching and learning. Therefore, how to accommodate assessment as a time efficient component in the context of limited class time, is a question worth considering. Wehlburg’s
(2006) answer is to encourage teachers to embed assessment activities in existing assignments or activities. Wehlburg (2006) states that the assignment or activity should feel comfortable for the teacher, that it should work (given the size of the class), fit the teacher’s philosophy of teaching, help students become more engaged in the lesson and be close to their learning goal. Integrating formative assessment with assignments or activities needs no additional time, as they seamlessly become part of lessons. Teaching and learning run in a parallel timeframe with assessment. In one single lesson, students learn, are assessed, and improve learning. Therefore, students learn in an efficient and effective way.

In this study, the teacher had a limited amount of teaching time. The teacher had to compact into one lesson revision, new knowledge delivery, classroom activities and games, and assessment. It is almost impossible to allocate a large amount of time specifically for assessment. Consequently, formative assessment was incorporated into the existing classroom activities and games. These classroom activities and games were used to engage students and provide opportunities for them to use their knowledge. Embedding formative assessment in the activities and games not only saves time, but also creates a secure environment for assessment, so that students will not develop negative feelings toward assessment. Therefore, formative assessment is positioned to truly reflect student learning progress.

Figure 2.2 summarises and highlights the components of formative assessment. These components characterise the assessment practice implemented in this study.
Constructivism is a learning theory or perspective on learning that argues that individuals generate new knowledge from their existing knowledge and previous experiences (Oblinger, 2004; Barrake, 2005; Jonassen, Cernusca & Ionas, 2006). According to a constructivist view, learners are actively involved in their learning processes. They use their personal prior knowledge and experiences to process new information, establish the relationships between old knowledge and ‘new’ information, between abstract information and concrete personal experience, and generate their own understandings (Oblinger, 2004). This theory argues that learners should take greater responsibility for their own learning (Von Glasersfeld, 1989). The notion of increasing responsibility on the part of learners is consistent with the assessment practices implemented in this study. Assessment engages students and enables them to become active in learning. When students are informed by feedback from teachers and offered a way to reach the desired outcome, they strive for their own improvement.
There are a number of different versions of constructivism (Young & Collin, 2004; Palinscar, 2005). Cognitive constructivism emphasises that individual constructions take place within a systematic relationship with the external world (Young & Collin, 2004). Social constructivism stresses that influences on individual construction are derived from and preceded by social relationships, while radical constructivism argues that knowledge develops as one engages in dialogue with others (Young & Collin, 2004; Barrake, 2005; Palinscar, 2005).

This study took place in classrooms, which are a social setting. Interactions occur between classrooms and the wider community. Dialogue is between students and teachers, students and students, and interplay occurs between existing knowledge and new information, to facilitate student Mandarin learning. Cognitive development through social interaction is the core of social constructivism. Furthermore, critical educational theorists view knowledge as socially constructed: knowledge is a product of agreement between individuals who live out particular social relations and who live in particular places in time (McLaren, 2007). A critical view of pedagogy asks how and why knowledge becomes constructed the way it does, and further, what should be done to change the existing to the new (McLaren, 2007). This study explores a new or different assessment practice that challenges existing practice. This different form of assessment relies on ‘multi-layer’ social interactions (mainly teacher-student interactions) to help students construct knowledge. Consequently, this study is viewed and conducted from a social constructivist perspective.

The origin of social constructivism is attributed to Vygotsky, whose focus was on the social basis of the mind (Rogoff, 1999). Vygotsky (2005, p. 290) suggested: “The social dimension of consciousness is primary in time and in fact. The individual dimension of consciousness is derivative and secondary”. Social constructivism views learning as a dimension of social practice (Lave & Wenger, 2005). Students, as social beings, interact with each other and with the environment in which they live, and construct knowledge in that social context. This socially interactive nature of learning is the grounding for learning that places the learner or student at the centre of the learning process – student-centred learning. Feedback, provided by the teacher and peers, is a significant component of student social learning contexts.
From a social constructivist perspective, the emphasis is not on the role of the ‘teacher’ but on the role of a ‘facilitator’ of learning. Because learners construct their own knowledge, learning is viewed as an individual endeavour. “Students are the key initiators and architects of their own learning and knowledge-making, rather than passive ‘vessels’ who receive the transmission of knowledge from ‘expert’ teachers” (Barraket, 2005, p. 65). Consequently, the teacher is viewed as “subject matter expert, resource guide, and facilitator of learning in the group” (Donnelly & Fitzmaurice, 2005, p. 93). The teacher shares responsibility with students. Thereby, “over time, the teacher’s involvement is gradually faded and the responsibility for learning is increasingly assumed by the learners” (Hannafin & Land, 1997, p. 194). There is an overall shift in the equity relationship between the teacher and student. The student progressively learns to take more responsibility for and gains more control over, learning. By providing feedback to students, the teacher promotes a shift in responsibility for learning to students.

It should be noted that Vygotsky did emphasise interaction with ‘more capable’ or ‘more skilled’ partners (Vygotsky, as cited in Rogoff, 1999). In an educational context, the ‘more capable’ partner is the teacher. This is an inequality, however, “the inequality is in skills and understandings rather than in power” (Roddoff, 1999, p. 79). The teacher is an expert in content but does not assume greater power or responsibility over student learning. The teacher shares learning responsibility with students.

In spite of the wide acceptance of constructivism as a theoretical perspective in education, some researchers have criticised it, while others have concerns about its implementation. Fox (2001) noted that constructivism too easily dismisses the roles of passive perception, memorisation and all the mechanical learning methods in traditional didactic teaching. Constructivism undermines the role of teachers who are experts in their subject areas and this may bring uncertainty to some solid and verified factual knowledge (Coll & Taylor, 2001). Other researchers (Biggs, 1998; Jin & Cortazzi, 1998; Mayer, 2004) have suggested that constructivist teaching approaches do not always guarantee teaching effectiveness. Coll and Taylor (2001) have criticised constructivist-based pedagogy in terms of the amount of teaching time it consumes: “the implementation of such pedagogy is highly problematic, given
large class sizes and the requirement to cover a detailed curriculum in limited time” (p. 220). They cite the elicitation of student views, the organization associated with group work and cooperative learning as taking a great deal of time, which inevitably means that less content is covered (Eylon & Linn, 1988). They argue that constructivist pedagogy is not time efficient.

This study is designed to enable students to take responsibility for their learning by embedding assessment throughout lessons. Students play a predominant role in learning. Therefore, despite the criticisms, a constructivist-based pedagogy that respects students as active learning agents is thought to be a more effective way to teach because, although it takes longer, student learning is more effective and includes learning to think critically and to take responsibility.

2.5 Student-centred learning

Student-centred learning is often presented as the complete opposite to traditional teacher-centred approaches, which have dominated the field of education for years. However, they are not mutually exclusive. Teacher-centred approaches are often presented as focused on the role of teachers, where teachers issue direct instructions to students, who passively accept whatever they are told to do (Pedersen & Liu, 2003). There are distinct advantages in teacher-centred approaches, and this helps explain its prevalence. It is an effective means of transmitting large amounts of information from teachers to students in a limited amount of time. This is especially true for factual content or the need to provide explicit instruction on how to complete a certain task. In addition, teacher-centred approaches enable the teacher to exercise a great deal of control over the learning environment, which is useful when teaching large classes (Biggs, 1998; Jin & Cortazzi, 1998; Hamer, 2000; Palincsar, 2005). Despite these advantages, if teacher-centred approaches are the only approach used in a classroom, then the promotion of active student learning may be hindered, because students are treated as passive recipients of information who do not effectively engage with it (Skamp, 2004).
Student-centred learning is based on the understanding that teaching provides opportunity for students to construct their own learning actively. The concept of student-centred learning is long standing. It was first identified in the field of education as early as 1905 (Lea, Stephenson & Troy, 2003; O’Neil & McMahon, 2005). However, an understanding of student-centred learning has evolved in different ways since then and is, at present, still evolving as it changes in emphasis through interaction with different theoretical perspectives.

Since 1967 social democracy has brought about a series of changes in education, including significant curriculum change. Educators have emphasised the processes of learning – the way learners learn – rather than the content to be learnt. This means that the curriculum is no longer prescriptive. Teaching is no longer simply about imparting knowledge. It is about teaching students “how to learn what she (or he) wants to know” (Rogers & Freiberg, 1994, p. 213). The focus has shifted from the content of what is to be learnt, which is always important, to fostering the process of learning (Rogers & Freiberg, 1994). This change in curriculum implies changes in education philosophy, values, teaching methods, and aims (Barcan, 1980). This shift in emphasis does not lessen the importance of content, but simply highlights the importance of process. A constructivist view of teaching and learning underpins this change. In 1974, Stenhouse outlined a process model of curriculum theory and practice. The model emphasised means rather than ends, and heralded a role shift for students. For the first time, students had a voice in the curriculum model. The process model shifted the focus from teaching to learning (Smith, 1996, 2000). It started the move towards student-centred learning in delivering the curriculum. This idea was taken further by Gibbs (1992, 1995), and Donnelly and Fitzmaurice (2005) decades later, when they emphasised what students would be able to do rather than what was covered by the teacher during the learning process.

Paralleling these changes in curriculum were changes in assessment. In order to liberate students from being obedient to and compliant with authority, some external examinations were abolished and competitive examinations were not encouraged (Barcan, 1980). More recent decades witnessed a shift in the purpose and methods of assessment from external to internal, participatory to continuous (Reynolds & Trehan, 2000; Pedersen & Liu, 2003).
Rogers (1994) has described the person-centred (student-centred) mode of teaching and learning. He identifies the ‘precondition’ for student-centred learning – a facilitative leader (teacher):

A leader or a person who is perceived as an authority figure in the situation is sufficiently secure within herself and in relationships with others to experience an essential trust in the capacity of others to think for themselves, to learn for themselves. She regards human beings as trustworthy organisms (Rogers & Freiberg, 1994, p. 212).

With this precondition, the facilitative teacher shares with students the responsibility for the learning process with students developing their own program of learning and reaching personal goals through self-discipline (Rogers & Freiberg, 1994). This reflects a shift in the power relationships between teacher and student. The facilitative teacher provides the student with an environment in which to gain essential power and control over their learning. The student learns to engage in the process of empowerment. However, the precondition that the teacher has the necessary skills to act as a ‘facilitator’ rather than align with a ‘traditional teacher’ role can be problematic when the teacher is a beginning teacher.

Student-centred learning has been variously defined in the discussion so far. However, some basic features remain constant throughout those definitions. Students are required to set their own goals for learning, and decide the resources and activities and games to achieve those goals (Jonassen, 2003). They have choices and make decisions for their own learning. Group work is typical of such learning opportunities. Students learn to think, negotiate, and make decisions to meet a common goal (Rogers, 2002).

Student ‘doing’ is important. Students prefer ‘doing’ to passive learning. Hannafin, Hill and Land (1997) argue that learning is most effective when it evolves from rich hands-on concrete experiences with realistic and relevant problems. Active participation in activities and games makes learning more active, more personalised and relevant, thereby more memorable for students.
Student-centred learning emphasises deep understandings which build on and from student prior experience and interests. Existing learning becomes the foundation for whatever learning follows (Oblinger, 2004). Interaction between what the student already knows and what the student is learning, personalises learning and deepens understandings. Therefore, because student prior knowledge varies, it is preferable to use open-ended activities so that students can use their particular past experiences.

Implicit in student-centred learning is the focus on the individual – placing the student at the centre of learning and meeting their needs. However, some scholars are concerned about this focus. Simon (1999) claims that the focus on the unique individual student can imperil student-centred learning because “if each child is unique, and each requires a specific pedagogical approach appropriate to him or her and to no other, the construction of an all embracing pedagogy or general principles of teaching become an impossibility” (p. 42). Edwards (2001) points out the danger from a social perspective, stating that the empowerment of students leads to “a person’s physical isolation from other learners” (p. 42). This is at odds with the principles of social constructivism, which emphasise the importance of interactions with the teacher and other students (Barraket, 2005). Students share ideas and understandings with, receive feedback from, and learn from others. Moreover, beyond their classrooms, students are members of a social community. Students interact in a social context. However, the emphasis on individuality may, in fact, deprive students of some interactions and may also align these interactions in different ways (Edwards, 2001; Barraket, 2005). It is possible that students will become too focused on themselves to care about anyone or anything else. Consequently, students may not realise the importance of their peers and not care about the needs of peers, the class, and society, which in the end may also lead to their becoming more self-centred.

Therefore, some educationalists believe that student-centred learning is in urgent need of review, and possible change. It is suggested that a social perspective needs to be actively incorporated and maintained within the student-centred perspective. Student-centred learning is not simply placing the student at the centre of learning; it is about how to address the student’s learning needs and interests in a social context (Pedersen & Liu, 2003; Barraket, 2005).
Lea et al. (2003) summarised the tenets of student-centred learning as follows:

- reliance on active rather than passive learning;
- an emphasis on deep learning and understanding;
- increased responsibility and accountability on the part of the student;
- an increased sense of autonomy in the learner;
- an interdependence between teacher and learner;
- mutual respect within the learner teacher relationship; and
- a reflexive approach to the teaching and learning process on the part of both teacher and learner (p. 322).

These tenets state that students should be taught to assume greater responsibility for and take control of their learning – student-centred learning is an empowering process. Moreover, the tenets emphasise an interpersonal relationship between teacher and student. This relationship is significant in student-centred learning. Teacher and student co-exist in one community. They participate in obvious as well as unobtrusive interactions. These interactions impact on both teachers and students. Students construct their own knowledge while internalising external and social interactions. In fact, it is more accurate to say that teacher and student co-construct knowledge within a social context. Learning does not take place only within the individual. Learning is both individual and social. Therefore, in order to learn, it is necessary to teach students to learn in and from a social context. Consequently, considered feedback and guidance from the teacher provide students with direction and momentum in the learning process. This teacher-student interaction reflects Vygotsky’s social constructivist view that social interaction can “promote development through the guidance provided by interaction with people who have achieved some skill in the use of those intellectual tools” (Rogoff, 1999, p. 72).

This study relied on the teacher to build on classroom activities and games and link knowledge of the Chinese language to previous student experience and knowledge. Feedback from the teacher and sometimes peers, prompts students to take responsibility for and control of their learning, which is contextualised by a number
of layers of social context. More importantly, this literature review indicates that the process of providing feedback to students requires skill not only in terms of learning content but also in providing a learning environment in which students learn how to learn. A component of this is learning how to take responsibility for learning. The teaching or facilitation skill required to achieve this will be difficult for a beginning teacher. The teacher will have to learn not only how to provide quality feedback to students on how to learn lesson content, but also how to learn how to learn, and to take responsibility for learning. This will include teaching the student how to interpret and use the feedback provided. This is a daunting task for a beginning teacher, especially if class time is limited.

Implementing a constructivist perspective on teaching and learning necessitates a student-centred approach, as outlined by Lea et al. (2003). However, such an approach requires that students learn to take responsibility and are accountable for their learning as part of the process of becoming autonomous learners. It requires that teachers not only facilitate this process but ‘have some skill’ in doing it. It can be argued that, although this study may attempt to implement a constructivist perspective that employs student-centred learning strategies, at best it can only strive to achieve this. Effectively, all the tenets suggested by Lea et al. (1999) may not be possible in the context of this study. Student-centred strategies, as described in this review, may not be fully achievable.

Figure 2.3 presents curriculum in a generic form. While it is recognised that the term ‘curriculum’ is all-encompassing, the view presented in Figure 2.3 is an attempt to focus on the nature of curriculum and those of its aspects that are more easily distinguished from assessment and pedagogy. However, it is recognised that this is an artificial view, designed to present the flavour and potential impact that curriculum may have on a learning environment, because it reflects a constructivist view of teaching and learning and encompasses a student-centred perspective. This view of curriculum is consistent with and interacts with assessment, as outlined in Figure 2.2.
2.6 Learning styles

Student learning styles are important in language learning (Banner & Rayner, 2000; O’Neil & Gish, 2008). Banner and Rayner (2000) have summarised the benefits of considering style in teaching and learning. Firstly, it is a direct accommodation of individual differences in the classroom. Secondly, it is a pedagogical concept which provides a more structured, assessment-based approach to learning in an FL (foreign language) scheme of work and thirdly, it is the enhancement of classroom management and group work in FL teaching. Empirical evidence has also shown that learning in a manner consistent with one’s learning style produces better results than otherwise (Banner & Rayner, 2000; Isemonger & Sheppard, 2003) The emphasis on student learning styles reflects a more student-centred approach to learning. There are different learning style preferences among students. Knowing the learning style of students is the first step in a more personalised approach to teaching, because it customises teaching and increases educational productivity (Isemonger & Sheppard, 2003).
Different learning styles indicate that students bring different preferred strategies and associated skills to the learning situation (More, 2008). Visual learners prefer to see something that represents what is to be learnt, such as pictures, diagrams and graphic information; auditory learners are comfortable with verbal directions and interactions without visual aids; hands-on or tactile learners like lots of movement and enjoy working with tangible objects, such as collages and other media (Oxford, Hollaway, & Horton-Murillo, 1992; Cohen, 2003; O’Neil & Gish, 2008). Good and Brophy (2008) suggest that it is an advantage for a student to understand their own learning style and have the opportunity to learn in their preferred way.

Teachers need to consider student learning styles and use different strategies in conjunction with style preferences (Cohen, 2003). This demonstrates that students are viewed as important individuals and that their individuality is respected. Consequently, learning is more effective if teachers choose materials and design lessons to accommodate student learning style preferences. However, it is difficult to accommodate all learning styles at the same time. Nevertheless, it is important that teachers use a variety of learning activities to ensure all students will be able to relate to their preferred learning style at least some of the time, or have students develop the ability to learn in ‘non-preferred’ styles (Kyriacou, Benmansour, & Low, 1996).

Kyriacou et al. (1996, p. 23) indicate that: “some pupils have a very marked and habitual preference for and adoption of the characteristics at one end of these dimensions (learning styles), and that this persists across different settings and tasks”. All students, at some stage, demonstrate their preferred learning styles. Banner and Rayner (2000) suggest that teachers should allow a short period of evaluation to identify the styles of students in the lesson before they develop style-led activities. After evaluation, teachers need to develop their teaching strategies to ‘teach in style’. Teachers are best able to meet student learning needs when they select teaching strategies, design lessons and provide students with materials that match their particular learning styles.

If assessment is embedded in classroom activities and games, assessment strategies will need to consider student learning styles in the same way as the activities and games in which they are embedded. This means that assessment components of
lesson activities and games should be aligned with a range of learning styles. To achieve this, the teacher has to allocate time to evaluate student learning styles. If this is not done then the effectiveness of embedding student assessment in learning activities will not be as great as it could be. As assessment practices and processes become part of classroom learning experiences they should be viewed under, and subject to the same scrutiny as other components of such experience.

2.7 Classroom activities and games

Student-centred learning is an approach to learning that takes into account the perspective of students. Student interests and past experiences are used to develop and deliver lessons. A particular feature of student-centred learning is that students often learn by doing – that is, students are involved in activities (Hamer, 2000; Garris, Ahlers, & Driskell, 2002). Using classroom activities or games is an effective way for a teacher to create a student-centred learning environment and facilitate student learning by doing. Other researchers (Cordova & Lepper, 1996; Bergin, 1999; Pivec, Dziabenko & Schinnerl, 2003; Skamp, 2004) have found that student classroom learning activities in the form of activities and games engage and motivate students.

2.7.1 Definition of classroom activities and games

Games have been used in education for a long time. However, there is no real agreement in the education literature on how games are defined (Garris, et al., 2002). One of the most comprehensive analyses of games is provided by Caillois (2002), who described a game “as an activity that is voluntary and enjoyable, separate from the real world, uncertain, unproductive in that the activity does not produce any goods of external value, and governed by rules” (p. 442). As technology has been increasingly applied in classrooms, computer-based games have become more and more popular (Kirriemuir & McFarlane, 2004). Consequently, computer games now dominate the world of classroom games. This trend has now reached the stage where games in the context of classrooms, have become synonymous with computer games (Kirriemuir & McFarlane, 2004).
Despite the varied definitions of games (Garris, et al., 2002), their main characteristics are as activities that:

- include a contest of physical or mental skills and strengths;
- provide fun and pleasure;
- are governed by a set of rules;
- involve an element of chance or fantasy;
- offer challenges against a task or an opponent;
- involve competition with others, with a computer, or with oneself (Inbar & Stoll, 1970; Hogle, 1996).

Historically, there are no definitive descriptions for the term ‘classroom activities’. The term seems to be understood almost universally without definition. Activities share the same characteristics as games. However, activities have fewer rules and are less competitive. In this study, activities are defined as small learning tasks, usually with an element of fun, in which students use their knowledge, skills and experience as resources to complete challenging tasks as an individual, pair or group. In some ways, games are a sub-set of activities, distinguished by competition and contextualised by rules.

The contemporary literature tends to equate the term ‘games’ with computer games as they are used in classrooms (Kirriemuir & McFarlane, 2004). However, there is a difficulty in finding suitable computer games that cover the diverse learning content in a typical primary classroom. Often computer games are of poor quality in terms of content (Pivec & Kearney, 2007). Oblinger (2004) made the point that games are not new to education; it is only recently that technology has been incorporated as a dominant feature of games, giving them a different character. The nature of games remains similar. Therefore, in this study the term ‘games’ refers to non computer-based activities that have an element of competition and are guided by a set of rules.

2.7.2 Student engagement and classroom activities

The reason most kids don’t like school is not that the work is too hard, but that it is utterly boring (Papert, 1998).
There is a large body of research that shows that activities and games engage and motivate students (Cordova & Lepper, 1996; Bergin, 1999; Pivec, Dziabenko & Schinnerl, 2003). The intrinsic motivation inherent in activities and games captures student interest. Activities and games are not mere tasks, but have ‘fun’ embellishments. These embellishments place plain learning tasks into meaningful and interesting contexts (Cordova & Lepper, 1996). Students are intrinsically motivated because activities and games are interesting or enjoyable. They break up the monotony of didactic teaching, sweeping away the stale air of some learning environments. Moreover, Cordova and Lepper (1996) point out “the concept of mastery of effectance motivation and the pleasure that derives from solving challenging problems” enhances the motivational appeal of activities and games (p. 716).

Success when using their knowledge to accomplish tasks gives students a sense of achievement. Student curiosity about activities and games, combined with a sense of self-determination and personal control, also increases interest (Cordova & Lepper, 1996). Students are intrinsically motivated, because they desire the success associated with a positive outcome and value activities and games as important (Deci & Ryan, 2002). For example, students want to demonstrate their talents by defeating peers to ‘win’ games. Consequently, students become ‘motivated learners’. Garris et al. (2002) regard “motivated learners” as “enthusiastic, focused, and engaged” who are “interested in and enjoy what they are doing, they try hard, and they persist over time” (p. 444). Activities and games are effective in motivating and engaging students and are therefore effective pedagogical tools.

Activities and games have long been intertwined (Oblinger, 2004) as a normal component of learning environments. Students have grown up with activities and games. Students are familiar with them because teachers use them as a way of engaging students to increase their motivation to learn. Moreover, activities and games facilitate student use of information in context, are inherently student-centered and provide immediate feedback (Oblinger, 2004). Essentially, Oblinger (2004) sees learning as a participatory social construction where new experiences are interpreted in terms of past experience and where students take an active role in their learning by
‘doing’ (Oblinger, 2004). Bergin (1999) suggests that students are interested in hands-on activities because they enable them to “engage with learning in a physical way” (p. 92). Students construct knowledge while ‘doing’ (participating in) activities and games.

Based on their ability to interest and motivate students by ‘doing’, this study developed and used classroom activities and games as the main way to promote learning. Factors that influence and enhance student interest were incorporated into activities and games when they were planned and developed. They were designed to interest and motivate students, both intrinsically and extrinsically, while they targeted specific content.

2.7.3 Using activities and games to learn

In a specific language learning context, Gaudart (1999) has pointed out that activities and games provide foreign language learners with a platform to participate in a communicative process that uses the target language. By definition, activities and games are tasks. In order to complete tasks, students need to actively recall their previous experience and use their existing knowledge (Pivec et al., 2003; Oblinger, 2004). These are the foundations for new learning. Students construct new knowledge, and build their learning on these foundations. Students have their own experience and knowledge repertoire. They have unique foundations. This uniqueness is addressed by the employment of open-ended activities and games. Consequently, in this study, a majority of the activities and games used were open-ended. The completion of these activities and games required students to use their prior knowledge, as well as new information. Moreover, the activities and games were based on and integrated with understandings acquired from previous study contexts.

Kennedy (2002) argued that teachers asking students to follow instructions without their understanding them was inappropriate in a contemporary learning environment whereas negotiation with them lead to more comprehensible input. Social interaction is important in learning. Games and activities are social because they enable students to interact freely, playing in pairs or in groups (sometimes on their own) and to play
with and against others (Oblinger, 2004). Activities and games encourage students to contact other students and discuss and negotiate their learning (Pivec et al., 2003). Team work and group work provide students with a context for peer-to-peer teaching and for the emergence of learning communities within student groups as they discuss and elaborate on course materials (Hamer, 2000; Squire, 2004). In this way students interact with each other to complete tasks. They display a range of desired responses based on their individual reactions as a consequence of their interaction with and feedback from activities and games (Pivec et al., 2003). In related studies, Doff (2002) concluded that the advantages of student-centred classroom activities and games in language teaching resulted in “more language practice, more learner involvement and concentration, more learner security (less anxiety), and more mutual help among learners” (pp. 27-28).

2.8 Language teaching and learning

In this study, Mandarin is an additional language to English, which is the native or first language (L1) for all students. Mandarin is a second language (L2), which refers to any language learnt after learning an L1 language, regardless of whether it is learnt in a classroom or in any other ‘natural’ context, such as the home (Gass & Selinker, 2008). There are two different forms of L2 learning. The first is second language (non-native) acquisition and occurs “in the environment in which that language is spoken” by many other people (Grass & Selinker, 2008, p. 7). The other is, as a foreign language and occurs “in the environment of one’s native language” in which there are few speakers of the foreign language (Grass & Selinker, 2008, p. 7). The important difference between second language acquisition and foreign language learning is the learning environment. Second language acquisition takes place in an environment with considerable access to speakers of the language being learnt, whereas foreign language learning does not, because it usually takes place in a classroom setting in a different cultural and language context (Grass & Selinker, 2008). This study is contextualised by foreign language learning.

It is impossible to deal with additional language learning without taking culture into account (Brody, 2003). Language and culture are inextricably bound (Scarino &
Liddicoat, 2009). In the context of this study, Mandarin is learnt as a foreign language in the students’ native culture, rather than in the culture of the language being learnt. Consequently, the culture of the foreign language needs to be taught as well as the language, since language is very much contextualised by culture (Brody, 2003; Kramsch, 2003; Scarino & Liddicoat, 2009). In addition, culture provides an interesting and engaging backdrop to language learning (Kramsch, 2003).

Traditionally, in foreign language education, teaching about culture is viewed as a “transmission of factual information about the people of the target country, and about their general attitudes and world views” (Kramsch, 2003, p. 20). This information is often learnt using pencil and paper strategies. Therefore, learning about the target culture is a separate, fifth skill after listening, speaking, reading and writing (Kramsch, 2003). This traditional view of teaching about culture limits culture as a one-way process and ignores the role of the home culture in foreign language acquisition. Moreover, culture is seen as an extra component, along with language learning.

Throughout the last decade, new ways have been developed to teach language and culture. Culture is reflected in the way language is used in social contexts; culture is an interpersonal process of meaning construction; culture is variation and difference; and members of a social group align themselves along invisible fault-lines (Kramsch, 2003). Culture is an integral part of language learning. Moreover, the diversity of culture is identified and respected. Generally, in foreign language education, culture is present in two forms: culture of the home language, and culture of the target language (Brody, 2003). These two types of culture have different functions: the culture of the home language is a stepping-stone for comparison with the culture of the target language, whereas the culture of the target language constitutes the knowledge to be imparted in class. However, they both serve the purpose of acquiring the target language. Therefore, both cultures are important parts of language teaching and learning, each performing a different function.

Foreign language education is different from second language education. Quite aside from the type of student and their motivation, both types of language education differ in their perspective on culture (Paige, Jorstad, Siaya, Klein, & Colby, 2003).
Students in second language education are immersed in the target culture, whereas students in foreign language education can only ‘taste’ the target culture through what they are taught by teachers or what they experience as part of other learning experiences outside immersion processes. Even trips to the target culture are not true immersion experiences. Therefore, in theoretical terms, the foreign language classroom can easily downplay culture or ignore it altogether. As culture is an integral part of language learning, foreign language teachers need to include more cultural elements in classroom activities to bridge between language and culture. Nevertheless, students do not necessarily need to become native to the target culture. They learn to speak the target language and learn something about the target culture.

Speaking is one of the traditional ‘four skills’ in language learning, along with listening, reading and writing and is usually viewed as the most complex and difficult skill to master (Tarone, 2005). In practice, given the usual time limits associated with learning programs, language content is prioritised more than culture. Often, language is taught in isolation from its wider cultural context, with the role of culture being downplayed in order to prioritise language learning (Tarone, 2005).

Figure 2.4 shows the components of pedagogy as they relate to this study. These pedagogical components are consistent with those of assessment and curriculum as outlined earlier, and are underpinned by views of constructivist and student-centred learning.
2.9 Language curriculum

The nature and impact of curriculum on this study was discussed earlier, and is outlined in Figure 2.3. Curriculum, as is discussed in this section, is more specific and refers to the actual Mandarin language content. Kerr defines curriculum as, “All the learning which is planned and guided by the school, whether it is carried on in groups or individually, inside or outside the school” (Kelly, 1983, p. 10; Kelly 1999). Implicit in this view is that there is:

- a body of knowledge to be transmitted;
- an outcome or outcomes to be achieved – a product;
- a process that is undertaken; and
- a practice or praxis that occurs.

These dimensions of curriculum are summarised in the definition proposed by McClusky and Smith (2008), that curriculum is:
A statement of the intended aims and objectives, content, experiences, outcomes and processes of an educational program, including:

- A description of the training structure (entry requirements, length and organisation of the program) including its flexibilities, and assessment system, and
- A description of expected methods of learning, teaching, feedback and supervision (p. 171).

Consequently, in NSW schools, a curriculum covers syllabus content, the means of teaching that content (pedagogy), and assessment (McClusky & Smith, 2008). This is consistent with the theoretical model underpinning this study, that there is a synergistic relationship between curriculum, pedagogy and assessment.

2.9.1 Syllabus

The Board of Studies NSW Chinese K–10 Syllabus was developed by the NSW Board of Studies. The aim of the syllabus is to “enable students to develop communication skills, focus on languages as systems and gain insights into the relationship between language and culture, leading to lifelong personal, educational and vocational benefits” (Board of Studies NSW Chinese K–10 Syllabus, p.13). Objectives elaborate on this aim. The objectives include using language, making linguistic connections, and moving between cultures, as shown in Figure 2.5. There is no hierarchical relationship between these objectives. The syllabus emphasises “the equal significance and interdependence of all objects” in order to deliver the Chinese language effectively (Board of Studies NSW Chinese K–10 Syllabus, p. 14).
This study was undertaken as part of the Research-Oriented School-Engaged Teacher Education (ROSETE) program. Schools participate in this program voluntarily, as do the volunteer Chinese teachers. Each participating school operates its own Chinese education program independently of other schools. The school which was the focus of this study formulated its program to fit in with its broader school curriculum. The Chinese language component of the curriculum was designed so that students learn Mandarin to enrich their language learning and to better understand Chinese culture, which is part of the Human Society and Its Environment (HSIE) curriculum (a NSW Public School Mandarin Program: Core Learning Overview, 2009). The school developed a scope and sequence for Mandarin with the assistance of a Chinese language consultant from NSW DET (WSR).

2.9.2 Scope and sequence

The scope and sequence of a curriculum provides a basis for long term lesson programming, and provides sequenced units of work. It states what students should learn as they move through different stages of study. The school in which this study took place developed its scope and sequence for Mandarin to cover seven years of study (Man, Kennedy, Tomlins & Wilson, 2009). The curriculum outlines what Mandarin knowledge should be taught at a particular time. The seven years of study
refer to the years each student is expected to learn Mandarin. In this research study, all student participants were in their second year of learning Mandarin. Each year’s content consisted of three or four core topics and a significant Chinese cultural event. Vocabulary, sentence patterns, and resources for each unit were all stated as part of the scope and sequence. The degree of difficulty of the content progressively increases each year (Man et al., 2009).

This scope and sequence acts as a flexible guide for teaching. Nevertheless, it does not have to be rigorously followed (Man et al., 2009). Content within a topic is selected as appropriate, for classes at different levels. A range of activities is then incorporated to cater for various learning styles. Teaching and learning strategies are chosen which best suit the content and students. The scope and sequence provides a framework in which to teach Mandarin in an organised and systematic way, and can be adapted to meet the requirements of the teacher.

2.10 Beginning teachers

Leask and Moorhouse (2005, p. 22) argue that beginning teachers move through at least three distinct phases in the early stages of their development as teachers. The first phase focuses on classroom management and on positioning themselves as a teacher. The second phase is characterised by whole class learning, while the third phase emerges when the beginning teacher starts to work with individual students and becomes concerned about their learning (Leask & Moorhouse, 2005). In the first phase it is difficult for beginning teachers to reorient their self-image from that of a learner to a teacher or learning-facilitator who is responsible for the learning of others (Leask & Moorhouse, 2005). Changing to an active, authoritative manager of learning takes time and skill. As a beginning teacher becomes more competent as a classroom manager, the focus moves from classroom management and self-image to student learning.

Phase two can vary significantly in duration. The teacher begins to master the day-to-day routine of the classroom and learns how to present lessons and explain content more effectively. However, student learning occurs in the context of the whole class
(Leask & Moorhouse, 2005). Assessment helps the teacher to evaluate learning outcomes. As the teacher learns how to evaluate and use assessment information, and as teaching skills and professional knowledge increase, the teacher begins to design lessons that cater for a greater diversity of students. Building differentiation into lessons facilitates learning for students who have a variety of abilities, backgrounds and learning styles (Leask & Moorhouse, 2005).

Allen and Toplis (2009, p. 32) built on the work of Leask and Moorhouse (2005), to reconceptualise the three phases that beginning teachers move through, and called them stages of development. Stage 1 is characterised by teacher self-development. Stage 2 focuses on whole-class learning, while Stage 3 is when teachers achieve classroom stability and develop skills that promote individual student learning. In Stage 1 the beginning teacher is preoccupied with self-image. They identify as a student rather than as a teacher. They want to be popular with students because they see this as a way of building rapport. They avoid developing “an atmosphere that negatively affects pupils’ emotions” (Allen & Toplis, 2009, p. 32). They view teacher and student relationships as an important part of teaching. Beginning teachers reason that if they can win student respect then classroom management and student learning will follow. The teacher/student relationship is viewed from the beginning teacher perspective and fails to consider that students will always challenge teacher boundaries and authority. It also fails to consider the willingness of the beginning teacher and the skills required to act on student misbehaviours.

During Stage 2 the beginning teacher develops strategies for classroom management. They begin to experience some success in classroom management, although success may initially be inconsistent, unpredictable and student-dependent. However, as classroom management skills are consolidated, the beginning teacher starts to focus on whole-class learning. Allen and Toplis (2009, p. 33) argue that improved classroom management and whole class learning occur in tandem. They refer to this as the stage of “steady improvement in classroom performance” (Allen & Toplis, 2009, p. 33). It is during this stage that some beginning teachers start to think they are achieving success and begin to feel secure as a teacher. They start to experiment with alternative approaches to teaching and employ more innovative strategies to accommodate broader school expectations (Allen & Toplis, 2009).
Stage 3 is when teachers become less anxious about classroom management. They start to consolidate their skills in whole-class learning and begin to think about individual student learning. However, the transition from Stage 2 to Stage 3 can be difficult, and some teachers do not succeed in mastering this transition. Others require the assistance of a colleague who can act as a mentor (Allen & Toplis, 2009). One of the reasons beginning teachers find this transition difficult is because a different emphasis in teacher learning is required. The beginning teacher has to learn how to become self-critical, to develop the skills of self-analysis and to be able to reflect on their teaching practice (Allen & Toplis, 2009). “The purpose of lessons needs to swing towards the needs of pupils, and away from you as a student teacher, with content focused on learning” (Allen & Toplis, 2009, p. 34).

Fuller (1969 in Arends, 2009) and Feiman-Nemser (1893 in Arends, 2009) also cites three stages as teachers move from ‘novice’ to ‘expert’. The first stage is ‘survival’, the second is the ‘teaching situation’ and the third, focusing on student results, they call the ‘mastery’ stage (Arends, 2009). All three stages parallel those of other researchers, including those described above. The ‘survival’ stage is about classroom control and interpersonal relationships. The ‘teaching situation’ stage centres on teaching itself and includes teaching strategies, teaching resources, catering for different student numbers and differentiating gender requirements. The ‘mastery’ stage is when teaching becomes efficient and effective and addresses student learning outcomes. During the ‘mastery’ stage teachers experience more effective interactions with students and learn to help them address their social and emotional needs, in addition to learning outcomes (Arends, 2009). Teachers learn to negotiate a balance between curriculum and school requirements and meeting student needs. It is during the ‘mastery’ stage that teachers acquire the skills required to work with students and share the responsibility for learning with students.

All three models acknowledge that moving from a beginning to an experienced teacher is developmental (Leask & Moorhouse, 2005; Allen & Toplis, 2009; Fuller & Feiman-Nemser in Arends. 2009). Although there are some differences, all three models are very similar. Beginning teachers move from “simple and concrete” views about teaching and learning to more “complex and abstract” views (Arends, 2009, p.
They develop knowledge and skills and acquire expertise as they build on their previous experiences and learn to become more expert teachers. The type of expert they become is dependent upon what they learn about the relationships between teaching and learning. Models of beginning teacher development can be used as a diagnostic tool for analysing teacher learning. They can help the beginning teacher to understand and accept anxiety about their classroom performance and address the concerns they may have about their early teaching practice. They can help a beginning teacher cope with a sense of inadequacy and help them ‘see the normality’ of their development as a teacher. Importantly, the beginning teacher can use these models to plan learning experiences for themselves and purposefully move towards becoming a more mature and professional expert teacher.

2.11 Action research

This study attempts to change assessment practice and thereby promote student classroom learning. Action research is “a powerful tool for change and improvement at the local level” (Cohen et al., 2007, p. 297). It can be integrated to work with normal classroom activities and assist teachers to observe, evaluate and reflect systematically, and so improve their professional practice and enhance student learning (Stringer, 2008). It can help teachers to promote understandings and self-awareness and to make changes in their teaching.

Action research is the name given to a series of procedures teachers can engage in, perhaps because they wish to improve aspects of their teaching, or alternatively, because they wish to evaluate the success and/or appropriateness of certain activities and procedures (Harmer, 2007, p. 414).

Action research helps teachers to realise the importance of learning how to find solutions to problems and develop personal theories about learning. It can also help teachers to cope with the relationships between students, teachers and researchers. It contributes to the professionalism and effectiveness of teaching practices (McDonough, 2006).
The term ‘action research’ was first used by Kurt Lew in 1944. Action research is “any systematic inquiry conducted by teacher-researchers, principals, school counsellors, or other stakeholders in the teaching/learning environment to gather information about how their particular schools operate, how they teach, and how well their students learn” (Mills, 2011, p. 5). Action research helps educators gain insight into their practice, and develop plans to achieve concrete change in a specific context to improve their practice (Pine, 2007). This study attempts to devise and implement a new assessment practice and to explore its effectiveness.

There are various types of action research. Cohen et al. (2007) have constructed a threefold typification of action research: technical action research, practical action research, and emancipatory action research. Mills (2011) differentiated action research based on different worldviews and philosophies. He divided action research into two basic types: critical or emancipatory research, and practical action research. The key features that differentiate the two types are summarised in Table 2.1.

Table 2.1 Key concepts of different types of action research (Adapted from Mills, 2011)

<table>
<thead>
<tr>
<th>Type of Action Research</th>
<th>Key Features</th>
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| Practical action research            | • Teacher researchers have decision-making authority.  
• Teacher researchers are committed to continued professional development and school improvement.  
• Teacher researchers want to reflect on their practices.  
• Teacher researchers will use a systematic approach to reflecting on their practice.  
• Teacher researchers will choose an area of focus, determine data collection techniques, analyse and interpret data, and develop action plans. |
| Critical action research             | • Action research is participatory and democratic.  
• Action research is socially responsive and takes place in context.  
• Action research helps teacher-researchers examine the everyday, taken-for-granted ways in which they carry out professional practice.  
• Knowledge gained through action research can liberate students, teachers, and administrators and enhance learning, teaching, and policy making. |
This study is about changing assessment practice from summative assessment to formative assessment, in an attempt to promote student learning. Students are expected to use teacher and peer feedback, which is the key element of formative assessment, to help them take responsibility for their learning. The teacher-researcher attempted to facilitate this change at the classroom level by embedding assessment in activities and games, as part of normal classroom lessons. The teacher-researcher could implement, reflect on, modify, and re-implement formative assessment practices while developing her professionalism and gaining insights into assessment. At the same time, colleagues were able to witness this process and inform their own assessment practices, which could bring about more widespread change.

Consequently, this study primarily follows a model of ‘practical’ action research. The teacher-researcher determined the focus for a change in assessment practice and investigated its effectiveness in the hope that the knowledge gained could help students and teachers enhance teaching and learning.

Although researchers have proposed various models for action research, all models share common elements, such as the identification of a focus, collection of data, analysis and interpretation of data, and development of an action plan (Mills, 2011). Mertler (2009) developed a four-stage action research process which includes a planning stage, acting stage, developing stage, and reflecting stage, as shown in Figure 2.7 below. The action research process begins with identifying a focus in current practice and developing an informed plan. After implementing the plan by collecting, analysing and interpreting data, teacher-researchers develop an action plan to change or improve the current practice. Finally, teacher researchers reflect on the entire process, and the reflections may serve as the basis for the next cycle of action research.
Action research is a cyclical or iterative, spiralling process. Based on reflections, teacher-researchers may continue to go through subsequent cycles of implementation, evaluation, and revision (Mertler & Charles, as cited in Mertler, 2009). Figure 2.8 illustrates the cyclical and spiralling nature of the action research process.
Action research may be described as a process involving clear and linear steps, but the reality is that “action research is a dynamic process of moving back and forth across these steps as the data acquired continually reshape practice decisions, additional questions and the gathering of additional data” (Parsons & Brown, 2002, p. 159). Action research is not only dynamic, as a consequence of its iterative process; it responds to input from the literature. The literature acts to inform reflection and subsequent action associated with iterations. In this way, teacher learning is further promoted and incorporated into the action research process. Action research is informed not only by the outcomes of practice but also by theory that is relevant to and informs next practice.

2.12 Conceptual framework

To investigate how formative assessment practice is embedded in classroom activities and games to promote student learning of Mandarin, it is important to conceptualise assessment in terms of its relationship with curriculum and pedagogy.
Figure 2.9 summarises the key ideas of curriculum, pedagogy and assessment as they influence and impact on this study. They are synergistically interrelated and cohere with a constructivist, student-centred view of teaching and learning, and form the theoretical framework for this study.

**Figure 2.8 Conceptual framework**

### 2.13 Conclusion

Chapter 2 has reviewed the literature that informed this study to derive its theoretical framework. The study took place at the intersection of curriculum, pedagogy and assessment and was contextualised by an interpretive methodology which borrowed some aspects of the positivist methodological paradigm. The beginning teacher literature has been explored to gain insights into the limitations of a beginning teacher attempting to implement complex and innovative
assessment processes to promote student learning. This chapter has concluded by discussing and justifying action research as an influence on the teacher-as-researcher as the method of enquiry.

Chapter 3 describes the theoretical basis of the methodology and outlines the mixed method research design. It justifies the teacher-as-researcher framework and outlines the influence of action research. It describes and justifies the data sources, data collection and data analysis.
Chapter 3: Methodology

3.1 Introduction

This chapter details the overall research methodology by outlining the research methods and their justification. The theoretical basis for the methodology is discussed and the research design is described and justified. The methodological framework of teacher-as-researcher is described and justified in the context of action research. Data collection is described, discussed and justified, as are the processes of data analysis. Also included is a discussion of the sample, the role of the researcher and the limitations of the design, methods and analysis employed. This involves issues of data reliability and validity as well as ethical considerations.

3.2 Theoretical basis for the methodology

The theoretical basis for the methodology is complex. This is because this study, although qualitative, draws on some aspects of an experimental or quasi-experimental design. It follows a relativistic theoretical perspective that articulates with aspects of positivism. A positivist view of research posits that authentic knowledge is based on sense and experience (Creswell, 2009). Positivism is a deterministic philosophy in which ‘causes’ probably determine ‘effects’ or outcomes (Creswell, 2009). Usually an hypothesis and a predetermined outcome are stated. By means of observation and experiment the predetermined outcome is either supported or refuted. Pine (2009) indicates that positivism emphasises prediction, control, and generalisation through quantitative methodologies. However, this view holds true more for quantitative research than qualitative research and is less applicable to the study of the nature of human behaviour, which is far less predictable (Creswell, 2009; Cohen, Manion & Morrison, 2007).

It is almost impossible to predetermine any outcome when studying social science, especially people, because of the immense complexity of social phenomena and of human nature. Therefore, positivism is less successful in the contexts of classrooms, schools and qualitative research approaches. For example, quasi-experimental approaches have failed to capture the critical elements of effective teaching and
learning and tend to ignore profound cultural and contextual factors affecting teaching and learning (Cohen et al., 2007; Pine, 2009). The purpose of this study is to investigate the role of activities and games in teaching and learning Mandarin in classrooms in a primary school. Although this study employs an experimental design, more specifically a quasi-experimental design, the nature of this study is essentially qualitative. It studies and explores human behaviour in a natural setting, a school classroom.

3.2.1 Relativism
A relativist view of research dominates this study. Relativism is the idea that some elements or aspects of experience or culture are relative to other elements or aspects. Thayer-Bacon (2003) suggests that all people are contextual social beings who hold a view that is dependent on particular circumstances and specific situations. Relativism accepts that different social circumstances may provide different outcomes, depending on context:

... knowers as socially embedded and embodied inquirers who are limited in their knowing by their environment, which includes their experiences with the world around them and each other, and their human capacities. Because people are social beings formed in relationships, those relationships will cause people to be formed in certain ways and not others and will limit the possibilities of knowing (Thayer-Bacon, 2003, p. 435).

Crotty (1998) indicates: “description and narration can no longer be seen as straightforwardly representational of reality” (p. 64). It is a case of reporting how something is seen and reacted to, and thereby meaningfully constructed, within a given community or set of communities, rather than merely mirroring ‘what is there’ (Crotty, 1998). Everything exists without absoluteness, and research findings depend on their unique context. Therefore, what we are looking for is ‘truth-in-context’ rather than the simple ‘truth’ (Stringer, 2008). This study took place in one primary school with the practice of the teacher-researcher at its centre. Consequently, the study findings were confined to a fairly narrow contextual setting. Thayer-Bacon (2003) suggests “we try to support our understandings with as much ‘evidence’ as we can socially construct, qualified by the best criteria upon which we can agree” (p. 436). In this study, data were collected from four classes in one school over two
terms. Eight different data sources were used to provide rich resources for building adequate and appropriate accounts so that qualified research findings could be concluded.

Consequently, this study cannot lead to an independent truth because the research findings are confined to specific classroom contexts at a particular time. The ‘truth’ of the findings applies only to that particular set of circumstances (Thayer-Bacon, 2003). Data were triangulated to look for possible alternative pathways through the data. It was recognised that different classes in a different school over a longer timeframe may have yielded different research findings and therefore a different ‘truth’. Therefore, although the research findings may not be generalised, the research method can be. In addition, other researchers may find the research findings generalisable to their context if it is sufficiently similar to that described by this study.

3.2.2 Teacher-as-researcher

‘Teacher-as-researcher’ has developed as a theoretical methodology to improve teaching proficiency and professionalism. It achieves these goals through the recognition of teacher self-worth and self-dignity (Lankshear & Knobel, 2004). Teacher-researchers are usually more interested in finding solutions to problems and exploring issues in the context of their own classrooms than researching for the sake of the research (Mitchell, 2002). As professionals, teachers do not just follow prescriptions and undertake routine tasks. They draw on their expertise and professional knowledge to create and produce new ideas which go beyond the conventional ideas of teaching (Lankshear & Knobel, 2004).

Lankshear and Knobel (2004) argue that there are two goals of teacher-researchers. One is to enhance the sense of self-identity and professionalism of teachers. The other is to improve teaching practice in the classroom. Barry and King (1999, p. 660) state that “the combination of a teacher with a researcher is probably the best arrangement, blending the classroom expertise and research expertise toward the betterment of classroom practice”. This study covered both these areas. This study is about a beginning teacher learning, by research, to teach in a different social and
cultural context and how to embed assessment practices in classroom activities and games to teach Mandarin. Therefore, the teacher is learning to enhance her professionalism while improving her classroom practice. It is typical of teacher-research because it is concerned with change in response to the needs of students or teachers or both (Stenhouse, 1975; Belanger, 1992; Cochran-Smith & Lytle, 1999). Consequently, teacher-as-researcher is a useful framework in which to place this study.

The teacher-as-researcher methodology was used in this study to promote better teaching and learning in the classroom. When teachers have problems with their teaching, they consult the literature and try to find solutions. Solutions tend to be more robust when they are based on evidence. Research is able to provide this evidence. With guidance from research, teachers are better able to develop and implement interventions in the classroom. By teachers being researchers, gaps between theory and practice are narrowed (Loughran, 2002). In this way, teacher-researchers can use better teaching strategies and resources to improve their teaching skills. In addition to individual professional enhancement, there is also the potential to enhance the professional learning of colleagues and develop teaching practices based on creative, systematic and logical evidence (Lankshear & Knobel, 2004).

A teacher-as-researcher culture helps teachers to be more aware of how they can contribute to educational research. It enables teachers to see themselves as ‘learners’ rather than “functionaries who follow prescriptions without question” (Kincheloe, 2003, pp. 18-19 in Lankshear & Knobel, 2004, p. 6). Teachers are seen as “knowledge workers who reflect on their professional needs and current understandings”. They learn to take responsibility for “research of their own professional practice” (Kincheloe, 2003, pp. 18-19 in Lankshear & Knobel, 2004, p. 6).

A teacher-as-researcher methodology uses methods of inquiry to collect data that is contextualised. As such, data collected takes into account the socioeconomic status of the school and its community. Consequently, this study is contextualised within and is about, real-life contexts. The emphasis is on interpretation and meaning-
making and acknowledges the role of the teacher-researcher in the research process (Lankshear & Knobel, 2004, p. 69).

A teacher-researcher gathers information on “events, processes, issues and activities within real-life contexts by interviewing eye-witnesses” (Lankshear & Knobel, 2004, p. 69). Data are valid, but different people have different interpretations, which result in different findings. Therefore, equally valid interpretations of the data construct different versions of reality. This is entirely consistent with the relativist perspective outlined in Section 3.2.1 and is another argument to justify the use of the teacher-as-researcher methodology as an appropriate methodology for this study. The teacher-researcher has a direct influence on the research design, findings and interpretations of a study. The values, beliefs and knowledge about a topic directly impact on what kinds of data are collected and how they are reported (Lankshear & Knobel, 2004).

3.2.3 Action research as a methodological influence

Action research was not the methodology for this study. Action research requires that teacher-researchers commit to continued professional development and school improvement. It requires ongoing systematic reflection on practice as it is a systematic and lengthy inquiry (Stringer, 2007). It takes a long time. For each action research cycle, it takes time to plan, act, develop and reflect to inform the next cycle. However, this study took place over only 13 weeks, with staged iterations of two weeks. The entire cycle was too short for the teacher-researcher to gather all the data for a full analysis. The iteration was also not ideal for the teacher-researcher to reflect on her plan, read the literature, formulate a new plan and then implement it in a considered way. Therefore, if action research were the methodology for this study, its fidelity and reliability would have been problematic. Despite these limitations, action research, and particularly its cyclic nature, has had a significant influence on the methodology employed. The teacher-as-researcher methodology that was employed drew on it substantially. The study was conducted as iterative cycles of planning, acting, developing and reflecting.
3.3 Research design

This study explored the role of activities and games in teaching and learning Mandarin. The purpose of the study was to investigate the research question: can assessment strategies be embedded in classroom activities and games to promote student learning of Mandarin more effectively. A qualitative methodology of teacher-as-researcher, using an action research perspective, was employed. Although the study was predominantly qualitative, it employed an experimental or more specifically a quasi-experimental design. Quasi-experiments are useful for evaluating intervention programmes and treatments for teacher-researchers (Lankshear & Knobel, 2004). Their experimental components help researchers to shed light on the role of activities and games and to gain insights into assessment strategies.

In a naturalistic enquiry, such as educational research, it is simply not possible for investigators to undertake a classic true experimental design, which is conducted in ‘a specially contrived, artificial environment’, since the research deals with the ‘normal’ or ‘natural’ research settings (Bogdan & Knopp-Bilken, 2005; Cohen, et al., 2007). Consequently, a quasi-experimental design was employed. Quasi-experiments are the stuff of field experiments, which take place in a natural setting rather than a laboratory, but where variables are isolated, controlled and manipulated (Cohen et al., 2007). The most fundamental feature of a quasi-experiment that distinguishes it from a true experiment is that it does not employ random processes, because it is a ‘natural setting’. Instead, matching was employed in this quasi-experimental research as “the equivalence of groups can be strengthened by matching” (Cohen et al., 2007, p. 283).

Two sets of classes were chosen in terms of their ‘sameness’ or similarities, such as their stage of development and the Mandarin learning they had experienced, and matched as pairs – a Year 4 pair, and a Years 2/3 pair. This study followed a matched post-test only comparison group design (Lankshear & Knobel, 2004). The main reason for this design is that elimination of the pre-test enables the teacher-researcher to “remove several alternative explanations for the effect of the intervention related to multiple testing” (Lankshear & Knobel, 2004, p. 156). It also saves time in the context of an externally imposed time restriction so that the period of the intervention is longer, as well as providing students with a more relaxing learning environment.
The intervention involved a control class in each pair being taught Mandarin using activities and games without embedded assessment as part of the activities and games. The experimental class in each pair experienced the same activities and games. However, assessment strategies were integrated into each activity and/or game. Essentially, embedded assessment, with its associated feedback, was the only experimental variable. The control and experimental groups for each year level were the existing classes. Hence, the students in each matched control and experimental class were similar in age. Both classes in each matched year group pair had been learning Mandarin for one and a half years. Nevertheless, “it is unrealistic to assume that any experiment can actually control all pertinent factors in multidimensional, multilayered, evolving classrooms” (Pine, 2009, p. 15). The salient factors in children, teachers, classrooms, and in the simultaneous interaction of all these variables with each other and with other causal factors cannot be ignored (Pine, 2009).

Although each experimental and control pair was matched as much as possible, in terms of available classes, there were a number of differences. There were inevitable and significant differences in the performance of experimental and control groups because they were not randomly allocated. These differences included previous experiences of the participants, in addition to those differences that are inherent in the natural settings of different classrooms, as well as those purposefully imposed by the intervention, such as embedded assessment. The students had different classroom teachers, who had different pedagogical approaches. The number of students in each class differed. The Year 4 control group had 31 students while Year 4 experimental group had 32 students. The Year 2/3 control group had 27 students while Year 2/3 experimental group had 28 students. This meant not all students were placed in pairs. The students’ learning abilities and attitudes to learning would have also varied.

Lack of pre-tests deprived the teacher-researcher of “information about the initial standing of study participants on the variable directly related to the research question” (Lankshear & Knobel, 2004, p. 157). It was acknowledged that embedding or integrating assessment into classroom activities and games changed them, as well as the nature of some of the classroom interactions. This is the nature of ‘naturalistic’ research settings. Comparing the findings of the control group with those of the
experimental group however, enabled the research question to be explored. Figure 3.1 represents the quasi-experimental design for this study.

<table>
<thead>
<tr>
<th>Two groups</th>
<th>Intervention</th>
<th>Post-test</th>
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<tbody>
<tr>
<td>Control group: one Year 4 class and one Years 2/3 class</td>
<td>No embedded assessment in activities and games</td>
<td>Test of Mandarin knowledge covered during the intervention</td>
</tr>
<tr>
<td>Experimental group: one Year 4 class and one Years 2/3 class</td>
<td>Embedded assessment in activities and games</td>
<td></td>
</tr>
</tbody>
</table>

Figure 3.1 Quasi-experimental design of the intervention

All students participating in this study received a Mandarin lesson once every two weeks. Each lesson lasted 30 minutes (see sample lesson plans in Appendix 8). Students in the control groups and the experimental groups were taught the same content, with the same activities and games by the same teacher, for the same length of time (six weeks of classes and one week for the post-test for Years 2/3 students and seven weeks of classes and one week for the post-test for Year 4 students). Essentially, two action research cycles were running simultaneously. One was for the Years 2/3 groups and one was for the Year 4 groups. Both Year 4 classes were taught one week with the Years 2/3 classes taught the following week. Consequently, the action research cycle for each year group was two weeks. Both the control and experimental classes in each year group followed the same two-weekly action research cycle (see Figure 3.2 and Table 3.1).
During each lesson, time was allocated for the teacher-researcher to provide students with feedback about their Mandarin learning. Feedback was provided in the form of a student and teacher dialogue or discussion. This was the nature of the assessment process. Each student/teacher discussion or student assessment was recorded by the teacher-researcher as field notes. Six or seven students were assessed during each lesson, depending on the number of students in each class, so that by the end of the data collection period, all students had been assessed twice. During these discussions, students also provided feedback to the teacher, which was recorded as field notes.

During each lesson the classroom teachers completed lesson feedback sheets that detailed the teacher-researcher’s classroom performance. These feedback sheets were collected at the end of each lesson and provided data about each teacher’s views on the use of the activities and games for both experimental and control classes and, in the case of the experimental classes, assessment as a way of promoting learning. Figure 3.3 shows the data sources collected during each fortnightly action research cycle. These data were then analysed in two ways. The initial analysis was informal,
part of the teacher-researcher’s reflections, so they could be integrated with other reflections as part of the teacher-researcher’s reflective journal and used to inform the following lesson. The second analysis was more formal and is discussed in detail in the section dealing with data analysis.

Figure 3.3  Formative data sources that informed subsequent lessons

At the end of the 13 weeks of teaching and data collection, a summative test was given to the control and experimental classes, to compare the effectiveness of student Mandarin learning. Students and teachers from both the control and experimental classes were interviewed, to find out their views about the activities and games and, in the case of the experimental classes, assessment. The views about the use of activities and games and assessment were obtained from all four classroom teachers and from 12 student participants, three from each of the four classes.

This study also sought information from the teacher-researcher about her teaching and assessment practices and how they were integrated with activities and games. A variety of data sources were collected to ensure a comprehensive set of data. Stringer (2008) suggests, “(e)ach of these types of information has the potential to increase the power and scope of the research process” (p. 55). The variety of data collection
methods included interviews, observations, a reflective journal, feedback sheets and summative test results. Figure 3.4 illustrates the summative data sources. Figure 3.5 illustrates all data sources, formative and summative. Summative data were gathered at the end of the 13 week study, while formative data were collected each week as part of the action research cycle.

Figure 3.4  Summative data sources
3.4 Data collection

This study employed a number of different data collection methods. Figure 3.6 categorises these methods into three fieldwork strategies, namely: “experiencing, enquiring, and examining” (Wolcott, as cited in Mills, 2007, p. 74). The diversity of these strategies helps ensure the power and robustness of the research process (Stringer, 2008).
3.4.1 Observation

Observation involves carefully watching and systematically recording what you see and hear in a particular setting (Schmuck, as cited in Mertler, 2009). The distinctive feature and unique strength of observation as a research process is that it offers an investigator the opportunity to gather ‘live’ data from naturally occurring social situations so it has the potential to yield more valid or authentic information (Cohen et al., 2007). Qualitative observations are “those in which the researcher takes field notes on the behaviour and activities of individuals at the research site” (Creswell, 2009, p. 181). This study employed qualitative observation as a primary research tool.

Observation is an essential analytical process in studying classroom life (Pine, 2009). Classroom observations provide a ‘rich and readily available’ source of data (Sagor, 2000) because “observation is used to collect data about students, to document learning and growth, to individualise instruction, to address special room learning environments, and to assess one’s own professional growth” (Pine, 2009, p. 190).

Observations are classified structurally (Foster, 2006; Lankshear & Knobel, 2004; Mertler, 2009). In this study, unstructured or less-structured observations were employed in a naturalistic manner. Unstructured observations observe “a context,
event or set of activities with few or no specific or tightly defined data collection goals in mind” (Lankshear & Knobel, 2004, p. 222). They produce detailed, qualitative description of student behaviours (Foster, 2006). The major characteristic of unstructured observation is flexibility. Without much pre-structuring, the teacher-researcher begins observations with a clear idea of what to observe – any student behaviour and class event. The data are used to generate theory based on the idea of “going into a setting open to ‘going with the flow’ and trying as much as possible just to “see” what is there to be seen” (Lankshear & Knobel, 2004, p. 222).

This study employed full participant observation, in which the teacher-researcher engages directly and completely with the context being observed (Lankshear & Knobel, 2004). Full participant observations have advantages. First, like other forms of observation, data are more direct and accurate. Pine (2009) claims that observation “captures ‘the here and now’ of a specific teaching/learning situation” (Pine, 2009, pp. 191-192). Secondly, observation enables fresh perspectives to be employed for behaviours observed so they are not taken for granted (Cooper & Schindler, as cited in Cohen et al., 2007). Over the 13 weeks of carefully planned observations, the researcher was able to describe taken-for-granted behaviours and reflect on their implications. Activities and games and assessment have always been part of classroom practice. However, how activities and games with embedded assessment promote student learning, is yet to be fully investigated. Observations of student reactions to familiar practices that can sometimes be taken for granted, provided insights that helped answer the research questions.

The third advantage of participant observation was that it can provide information about the behaviour of those who cannot speak for themselves, nor take part in interviews (Foster, 2006, p. 59). Data from student participants are highly valued. Student interviews were conducted at the end of the data collection. However, some students were not interviewed. Classroom observations provided data from those students who consented to take part in the research, but who were not interviewed. Fourth, observational data is an important data source to triangulate and supplement other data. A variety of data sources were used to make data valid and reliable. A final advantage is that full participant observations lend weight to data
interpretations, as teacher-researchers can rightly claim an insider perspective on what takes place (Lankshear & Knobel, 2004).

However, there are disadvantages to full participant observation. Firstly, the insider perspective may blinker a teacher-researcher’s observations (Lankshear & Knobel, 2004). Secondly, students may change the way they behave because they are being observed, and this leads to data inaccuracy (Foster, 2006). A third disadvantage is that observational research is very time-consuming. Throughout the study, all participating students were observed and assessed twice, as part of the data collection process. Consequently, in each lesson, six or seven students were assessed and observed.

Observations were recorded in the form of field notes and later analysed using content analysis. It was important to record the observational data continuously and immediately. Sagor (2000) indicates that data, student behaviours and classroom events occur all the time and everywhere. Hence, if it is not deliberately captured, in a timely fashion, data are likely to fade from memory. Data were to be recorded the moment or shortly after they were observed. However, teaching practices did not always facilitate immediate note-taking. Field notes can be produced both “in situ and away from the situation” (Cohen et al., 2007, p. 181), depending on the pragmatics of the setting. However, observations of assessment practices were made and recorded during observations, or immediately after teaching. Occasionally, observations were recorded the evening of the day they occurred. A reflective journal was used to think through and attempt to understand observations and why they occurred. To ensure objectivity the teacher-observer recorded all observations, both positive and negative.

3.4.2 Journals
A journal, or diary, was kept by the teacher-researcher as a valuable means of collecting data. A journal is a written record of thoughts, observations and reflections (Pine, 2009). It is “an ongoing attempt by teachers to systematically reflect on their practice by constructing a narrative that honors the unique and powerful voices of the teachers’ language” (Mills, 2011, p. 86).
Journals are not mere narrative accounts of what is happening in classrooms. They include not only observations but feelings associated with the action research process (Mills, 2011). Cochran-Smith and Lytle (as cited in Mills, 2011, p. 86) suggest that journals might incorporate:

- records of classroom life in which teachers write observations and reflect on their teaching over time;
- a collection of descriptions, analyses, and interpretations;
- the essence of what is happening with students in classrooms and what this means for future teaching episodes;
- a way for teachers to revisit, analyse, and evaluate their experiences over time; and
- windows on what goes on in school through the teachers’ eyes.

Journals have significant advantages. First, journals provide honest descriptions of what is happening in classrooms from the perspectives of teachers (Pine, 2009; Mills, 2011). Teachers are the authors as well as the only audiences to read journals, so they are free to write for their own reasons (Pine, 2009). Second, journaling offers “a rich means for describing practice; for recording and examining beliefs, assumptions, questions, and challenges; and for expressing feelings and identifying problem” (Pine, 2009, p. 194). Third, journals can serve as historical documents providing opportunities to track the development of teachers or evolvement of any particular issue (Pine, 2009) because “Unlike interviews, which usually occur only once or on a small number of occasions, diary data can be gathered over a much longer timeframe” (Gibson & Brown, 2009, p. 78). Last, but importantly, journals can help teachers reflect on their teaching, assess the effectiveness of teaching and learning, identify problems, develop new insights, and plan future actions (Pine, 2009). Therefore, journals can serve the next iteration in an action research process.

In this study, the teacher-researcher kept a journal on a weekly basis. Every night after Mandarin lessons, the teacher-researcher recorded her class observations as both intellectual and emotional reflections. She used the process of journaling to
reflect on broader issues about Mandarin teaching and learning. The journal became a ‘melting pot’ infused by a variety of data sources, readings, discussions and anything else relevant to the study. Journal reflections enabled the teacher-researcher to identify what she needed to improve, what was being achieved and where further action and thought was required. Journal reflection and writing, as described by Pine (2009) and Mills (2011), became a purposeful and strategic way of adapting practice to the ever-changing demands of the classroom and for maintaining focus on the research process and student learning.

3.4.3 Teacher lesson feedback sheets

Initially, informal discussions, between the teacher-researcher and classroom teachers, were planned to provide feedback to the teacher-researcher about each lesson. These feedback sessions would also act as a source of data about the views classroom teachers were forming on the use of activities and games to teach Mandarin and, in the case of experimental class teachers, embedding formative assessment to promote student Mandarin learning. These feedback discussions were to occur immediately after each lesson. Informal discussion was chosen as the feedback strategy because it was convenient, time effective, because it promoted the exchange of ideas between the teachers and the teacher-researcher and would help clarify misunderstandings and develop further understandings.

However, because of school contextual constraints such as the timetable, it was found after several weeks that the planned discussions did not always occur and, as a result, important study data were being lost. Therefore, a different strategy had to be implemented. Teacher views at the end of each lesson were essential, because they were an important influence and input for the development of the following lesson. They were also essential in attempting to improve classroom practice. Consequently, the completion of teacher feedback sheets replaced informal discussion as the strategy for obtaining classroom teacher feedback and as a data source. This change occurred halfway through the study.

Feedback sheets are, by their nature, questionnaires. Questionnaires are widely used to collect survey information and provide structured, often numerical data. They have
the added advantage that they can be administered without the presence of the researcher and are comparatively straightforward to analyse (Wilson & McLean, as cited in Cohen et al., 2007). Questionnaires emphasise gathering a range of written responses to specific questions from a range of people (Lankshear & Knobel, 2004).

Like journals, questionnaires are a form of written data that can be easily adapted for educational research. Their features and advantages include the potential to:

- inform present and future decisions concerning education in general, pedagogy within a specific subject area or across subject areas, professional development for teachers, policy development, curriculum development and so on;
- provide a ‘reading’ or an account of a particular policy or curriculum development, a practice, a social event or other phenomenon that impacts education in some way;
- provide contextual and historical insights on an issue, event, problem or practice relevant to education; and
- enable the teacher-researcher to (re)construct an account of a past event or practice (Lankshear & Knobel, 2004, p. 248).

There is a variety of questionnaire types. One simple rule helps determine which type should be used: “the larger the size of the sample, the more structured, closed and numerical the questionnaire may have to be, and the smaller the size of the sample, the less structured, more open and word-based the questionnaire may be” (Cohen et al., 2007, p. 320). Striking a balance between a completely open questionnaire and a completely closed and structured questionnaire is the semi-structured questionnaire. It is a powerful instrument because it “sets the agenda but does not presuppose the nature of the response” (Cohen et al., 2007, p. 321). The semi-structured questionnaire has a clear structure, sequence and focus, but the format is open-ended – there are how, what, when, why questions and ‘tell me requests’ with space on the question sheet – enabling respondents to replay in their own terms (Cohen et al., 2007; Lankshear & Knobel, 2004). Open-ended questions enable respondents to write a free account in a way they think best. They can explain and qualify their
responses, and supply rich data so they can better capture the specificity of a particular situation. In this way semi-structured questionnaires facilitate the investigation of complex issues (Cohen et al., 2007). Despite these advantages, open-ended questions can also produce irrelevant and redundant information, and they take more time to complete. This may result in respondents refusing to answer them or not completing all questions completely and thoughtfully (Cohen et al., 2007).

For this study, the purpose of the teacher feedback sheets was to obtain a detailed description of teachers’ observations and impressions on the use of activities and games, and embedded assessment. Four class teachers completed the feedback sheets. A semi-structured feedback sheet was developed because the number of respondents was small. The teachers from both the control and experimental groups answered five questions to describe their impressions of the Mandarin lessons and the activities and games. The sheets also provided a means for teachers to offer advice on teaching and how to improve it. The teachers of the experimental groups answered two additional questions about the role and implementation of embedded assessment. Although the feedback sheets were collected after each lesson, sometimes teachers were not able to finish them, so they did not hand the sheets in until the next week. Consequently, this delay resulted in some feedback sheets being lost. Although the written feedback sheets replaced informal feedback discussions halfway through the study, and despite the fact that some sheets were lost, they provided a rich source of data that described Mandarin lessons, the use of activities and games, and the implementation of embedded assessment.

Feedback sheets and journals are both forms of written data that have two broad purposes. The first is to inform, contextualise, conceptualise, theorise and, during its construction, facilitate the design of the study. The other purpose is to generate an empirical data set from which results and findings can ultimately be derived (Lankshear & Knobel, 2004).

3.4.4 Interviews

Interviews were used as a substantive data source. An interview is “an interchange of views between two or more people on a topic of mutual interest, sees the centrality of
human interaction for knowledge production, and emphasizes the social situatedness of research data” (Kvale, 1996, p.14). It is a basic method of data gathering to obtain a rich, in-depth experiential account of an event or episode in the life of the respondent (Fontana & Frey, 2005). A research interview is “a two-person conversation initiated by the interviewer for the specific purpose of obtaining research-relevant information, and focused by him on content specified by research objectivities of systematic description, prediction, or explanation” (Cannell & Kahn, 1968, p. 530). Interviewers use an interview dialogue to obtain information from interviewees. This study used interviews as a source of information to mirror and record a true and accurate picture of student and teacher experience in terms of their views of the classroom activities and games and embedded assessment.

The purpose of this study was to investigate whether assessment strategies can be embedded in classroom activities and games to more effectively promote student learning of Mandarin. Consequently, activities and games, embedded assessment and student learning were the focus of interviews. Specifically, the interviewer used the interviews to obtain participant opinion about the effectiveness of the activities, games and embedded assessment in promoting the learning of Mandarin. The interviewer translated these specific objectives into questions that made up the body of the interview schedule (Cohen et al., 2007).

In this study, a semi-structured interview was employed. A semi-structured interview is a popular interview technique “where a schedule is prepared that is sufficiently open-ended to enable the contents to be reordered, digressions and expansions made, new avenues to be included, and further probing to be undertaken” (Cohen et al., 2007, p. 182). The semi-structured interview schedule allows for a set of interview questions to be developed around themes that address the research questions in a flexible way. Questions are asked in an order that is appropriate to the discourse that evolves as the interview is conducted, with wording that is contextually appropriate (Gibson & Brown, 2009). Responses are recorded as notes by the interviewer and later classified and coded (Wilson & Sapsford, 2006).

When preparing the interview schedule for this study, the framing of questions was considered. There were four different interview schedules developed, each with a
particular framing. Interviews were conducted with teachers from control classes and with teachers from experimental classes. Students from both control and experimental classes were also interviewed. The focus of the interviews associated with the control classes was the effectiveness of activities and games in promoting Mandarin learning. However, the interviews for the experimental classes focused on the effectiveness of activities and games, as well as the effectiveness of embedded assessment in promoting Mandarin learning. Throughout the interviews, prompts and probes (Morrison, as cited in Cohen et al., 2007) were used to obtain comprehensive responses to the questions asked. Prompts enabled the interviewer to clarify responses, while probes enabled the interviewer to ask respondents to extend, elaborate, add to, provide detail for, clarify or qualify their response (Morrison & Patton, as cited in Cohen et al., 2007). Probes functioned as follow-up or ‘why’ questions.

Gibson and Brown (2009) describe the distinctive skills required when conducting semi-structured interviews:

- remember the questions that are to be asked;
- ask questions at appropriate times;
- bring the conversation around to the topics of interest without disrupting the natural flow of conversation;
- sense when a topic of enquiry has been exhausted;
- help the participants to make links between the topics being discussed;
- manage the duration of the interview; and
- evaluate the analytic relevance of the information as it is being produced (p. 99).

Interviews with children can be particularly challenging. Children differ from adults in all respects. In particular, they are more vulnerable and sensitive. Therefore, the interviewer must develop a ‘trusting’ relationship with children. Straightforward and age appropriate language should be used to ask questions so that children understand each question (Gibson & Brown, 2009). Throughout the interviews for this study,
these recommendations were closely followed. Notes, as well as audio-tape recordings were used to record interview responses.

A total of 12 students were interviewed, three from each of the four classes. The student participants were purposefully selected using the criteria of: academic achievement; gender ratio; and ability to communicate. In purposive sampling, participants are included in the sample on the basis of informed judgement, to reflect the ‘typicality’ of the overall group (Cohen & Manion, 1994, p. 89). For this study, participants were purposively selected to be interviewed because they were typical or representative of the range of students in each class. The first criterion for selection was that the three students should represent the range of academic abilities in each class. Consequently, after marking the summative tests, students were divided into three bands – high achievers, those from the middle of the class, and poor achievers. Because the summative test was only one measure of achievement, the teacher-research and classroom teacher, for each class, conferred to finalise student selection. Both the teacher and teacher-researcher reached consensus, based on their personal experiences of each student’s previous academic achievement in Mandarin. One student was purposefully selected from each of the three bands in each of the four classes after consideration of the other two criteria.

The second criterion was the gender of the students interviewed. In the Years 2/3 groups, the number of boys was twice that of the girls. Therefore, the ratio of boys to girls from the control and experimental groups was two boys to one girl. In Year 4 there were equal numbers of boys and girls. Therefore, the ratio of boys to girls in Year 4 was one to one. This translated to one boy and two girls from the control group and two boys and one girl from the experimental group.

The third criterion was that each participant had to be relatively ‘communicative’, rather than quiet or shy. This criterion was used because young children are known for not responding in interviews in a way that provides rich and well communicated ideas. A study carried out by Lamb, Orbach, Hershkowitz, Esplin, and Horowitz (2007) found that “the most important of these factors (factors affecting interview data collection) pertains to the interviewer’s ability to elicit information and the child’s willingness and ability to express it, rather than the child’s ability to
remember it” (p. 2). Consequently, students were selected on their ability to freely communicate and express their ideas.

Tables 3.2 and 3.3 list the interviewees from Years 2/3 and Year 4 respectively. The interviewees were selected on the basis of their academic achievement in Mandarin, gender and ability to communicate their ideas. The names of each student are pseudonyms.

Table 3.2   Student interview participants from Years 2/3

<table>
<thead>
<tr>
<th>Academic achievement in Mandarin</th>
<th>Control group</th>
<th>Experimental group</th>
</tr>
</thead>
<tbody>
<tr>
<td>High achiever</td>
<td>Lea, female</td>
<td>John, male</td>
</tr>
<tr>
<td>Mid-range achiever</td>
<td>Matthew, male</td>
<td>Mark, male</td>
</tr>
<tr>
<td>Poor achiever</td>
<td>Cory, male</td>
<td>Heather, female</td>
</tr>
</tbody>
</table>

Table 3.3   Student interview participants from Year 4

<table>
<thead>
<tr>
<th>Academic achievement in Mandarin</th>
<th>Control group</th>
<th>Experimental group</th>
</tr>
</thead>
<tbody>
<tr>
<td>High achiever</td>
<td>Rachel, female</td>
<td>Kurt, male</td>
</tr>
<tr>
<td>Mid-range achiever</td>
<td>Finn, male</td>
<td>Mike, male</td>
</tr>
<tr>
<td>Poor achiever</td>
<td>Tina, female</td>
<td>Santana, female</td>
</tr>
</tbody>
</table>

Transcription and analysis are two important steps in processing interviews. Transcriptions are “decontextualized, abstracted from time and space, from the dynamics of the situations, from the life form, and from the social, interactive, dynamic and fluid dimensions of their source; they are frozen” (Cohen et al., 2007, p. 367). In order to mirror the original interviews and avoid data loss, all data should be recorded. When transcribing the interviews, not only was what was being said recorded, other data, such as the tone of the voice, the mood of the interviewees, the emphases placed by the speaker and so on, were also noted (Cohen et al., 2007). Raw or first-hand data that has been transformed or changed during the transcription process to become interpreted data is not a desirable outcome of the process of
transcription. Consequently, all interviews were transcribed in accordance with these requirements.

The interview transcripts were analysed using the following procedure:

1. hand coding data,
2. sorting data into related categories,
3. analysing categories to identify recurring patterns and themes,
4. clustering and specifying the range of participants,
5. making contrasts and comparisons,
6. subsuming particulars into generals when appropriate to do so, and
7. ensuring conceptual coherence (Coble, Selin & Erickson, 2003).

Overall, this specific type of semi-structured interview, using open-ended questions to gain information from both teachers and young students, had its advantages. The most important advantage was that the interviewer had control over the interviews. Another advantage was that direct interaction allowed for greater depth of interaction and probing, compared with other methods of data collection. The interview provided a platform for both the interviewer and interviewees to express their personal point of view (Cohen et al., 2007). On the other hand, interviews have some limitations. First, interviews have their own implicit rules about following the interviewer (Wilson & Sapsford, 2006). This study was a typical case of ‘underlying obedience’. The interviewer was the Mandarin teacher of the student interviewees. This relationship, in conjunction with the inherent concept of ‘underlying obedience’, would have inevitably influenced student responses in a direct way. There was a likelihood that students would modify their responses, telling the interviewer what they thought the interviewer expected them to say. Another disadvantage of interviews is that the interview process is prone to subjectivity and bias on the part of the interviewer. Transcriptions inevitably lose data because it is impossible for the teacher-researcher to transcribe everything that took place during the interview. Another disadvantage of interviews is that the whole process is very time-consuming (Cohen et al., 2007).
3.4.5 Tests

A test is a powerful method of collecting information, particularly numerical data. There are different types of tests for different purposes. Summative tests are one type of test, and were employed by this study. Cohen et al. (2007, p. 419) define a summative test as “the test given at the end of the programme, and is designed to measure achievement, outcomes, or ‘mastery’”.

The tests used in this study were research-produced (Cohen et al., 2007). The tests were constructed by the teacher-researcher and tailored explicitly to address the research question underpinning the study (Lankshear & Knobel, 2004). This study explored whether assessment strategies embedded in classroom activities and games can more effectively promote student learning compared with summative assessment. Consequently, because the ultimate goal of this study was to use formative assessment techniques, the role of tests as an assessment strategy was downplayed. This meant that students were not subjected to a pre-test. Although there are inherent disadvantages in not pre-testing students before an intervention, it was decided that starting students’ Mandarin study with a test could have undesired implications. Students may have unconsciously aligned their study of Mandarin with testing. As a result, only a post-test was administered at the end of the study.

The tests were constructed for specific purposes. A test was constructed that addressed the content covered by the Years 2/3 classes and another test was written to cover the content taught to the Year 4 classes. Both the control and experimental classes in each year sat the same test. Therefore, the test results could be compared within each year group. It should be stated that, although the tests were produced for research purposes, they were a normal part of Mandarin learning processes and also functioned to assess student learning in their own right. They served both research and classroom learning purposes. The ‘down-side’ of administering the tests is that they occurred in one of the 30-minute Mandarin lessons.

The tests were in written form, for two reasons. First, written tests made it possible to test a large number of students in a limited time. Second, the majority of the students were observed to be visual learners or at least, had learnt to function reasonably well as visual learners. With the ‘conditioned’ presence of pen and paper, students were
better able to perform to their potential by completing a written test. An additional agenda of the Mandarin tests was to help students improve their learning rather than to present them with difficult questions. As far as a test can be, the tests were designed to be interesting and enjoyable.

The grading system used a process known as ‘summated scores’ (Howitt & Cramer, as cited in Cohen et al., 2007). This is a common grading system and is used by most teachers (Howitt & Cramer, as cited in Cohen et al., 2007). It involves creating a pool of items or questions, marking student responses as either correct or incorrect, and allocating a mark for each correct response. A student’s score becomes the total score gained by summing the marks for all the correct responses. Therefore, the test scores can be used for comparative purposes across a particular student group (Lankshear & Knobel, 2004). There were five sections in each test: matching, labelling, reading comprehension, translating Mandarin to English, and translating English to Mandarin. In this way each test was constructed to allow for a range of student learning styles.

3.5 Data analysis

In processing qualitative data, data analysis is “a reflexive, reactive interaction between the researcher and the decontextualised data that are already interpretations of a social encounter” (Cohen et al., 2007, p. 368). Qualitative data analysis involves organising, accounting for and explaining the data (Cohen et al., 2007). Different approaches to data analysis were employed in this study.

Qualitative data were analysed using thematic analysis, while the processing and analysis of test results was quantitative and employed a range of statistical analyses. A summary of the data analysis processes is shown in Table 3.3. Observations of each class, and responses from students were recorded as field notes and analysed using thematic analysis. Data recorded as field notes, as well as the teacher-researcher reflections, were used as data sources for the teacher-researcher reflective journal entries, which were analysed using thematic analysis. Reflections and thinking recorded in the reflective diary were used to shape successive lessons.
Thematic analysis was also used to analyse interviews with both teachers and students, with feedback from teachers also analysed using thematically. Summative test results were recorded numerically and analysed statistically.

<table>
<thead>
<tr>
<th>Source of Data</th>
<th>Form in which Data Recorded</th>
<th>Type of Data Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teacher-researcher observations</td>
<td>Field notes</td>
<td></td>
</tr>
<tr>
<td>Responses from students</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Feedback sheets from teachers</td>
<td>Feedback sheets</td>
<td>Thematic analysis</td>
</tr>
<tr>
<td>Teacher-Researcher reflections</td>
<td>Reflective journals</td>
<td></td>
</tr>
<tr>
<td>Interviews with teachers</td>
<td>Interviews</td>
<td></td>
</tr>
<tr>
<td>Interviews with students</td>
<td></td>
<td>Statistical processing</td>
</tr>
<tr>
<td>Summative tests</td>
<td>Numeric test scores</td>
<td></td>
</tr>
</tbody>
</table>

3.5.1 Thematic analysis

Thematic analysis was used to analyse all the qualitative data. It is defined as “a method for identifying, analysing and reporting patterns (themes) within data” (Braun & Clarke, 2006, p. 79). It describes and organises data in detail and sometimes can go beyond this, to interpret aspects of the phenomenon (Boyatzis, 1998). Therefore, for both researchers and practitioners it “increases their accuracy or sensitivity in understanding and interpreting observations about people, events, situations, and organizations” (Boyatzis, 1998, p. 5).

Thematic analysis has a number of advantages. Apart from its flexibility and ease of accessibility, thematic analysis can usefully summarise key features of a large body of data and offer a detailed description, highlight similarities and differences across the data set, generate unanticipated insights, and produce appropriate qualitative analyses to inform policy development (Braun & Clarke, 2006). However, it also has disadvantages. Flexibility can make analysis difficult, and may precipitate a loss in focus, as there is a wide range of things that can be said about the data. Thematic
analysis has limited interpretative power if it is not used within a pre-existing theoretical framework. Despite wide use, thematic analysis is not given enough kudos. It is often identified as a different process (for example, a form of content analysis) or it may not be identified at all (Braun & Clarke, 2006).

Thematic analysis is a qualitative analytical method used to discover themes. According to Braun and Clarke (2006, p. 82), a theme “captures something important about the data in relation to the research question, and represents some level of patterned response or meaning within the data set”. Ideally, a theme should represent both significance and prevalence; however, prevalence does not guarantee significance (Braun & Clarke, 2006; Fereday & Muir-Cochrane, 2006). What determines a theme is whether it captures any important aspect of the research topic, rather than how many times it is repeated or how much space it is given. Whether a theme is able to capture ‘essence’ is a judgement that has to be made by the researcher. Therefore, researcher judgement has a significant influence on determination of theme (Braun & Clarke, 2006).

There are three primary approaches to the development of themes. The first is theory driven, the second is prior data or prior research driven, and the third is inductive, or data driven (Boyatzis, 1998). ‘Theory-driven’ is where researchers begin with theory and then formulate signals, or indicators, or evidence that would support the theory. Prior-research-driven thematic analysis is where researchers identify themes on the basis of prior research. The prior research is often a pilot study or related research that has been undertaken by the researcher. Data-driven analysis is where researchers identify themes directly from raw information (Boyatzis, 1998). The choice among the three forms of thematic analysis is linked to “how and why researchers are coding the data” (Braun & Clarke, 2006, p. 84).

Braun and Clarke (2006, pp. 87-93) have provided a six-phase guide to thematic analysis.

Phase 1: familiarising yourself with your data;
Phase 2: generating initial codes;
Phase 3: searching for themes;
Phase 4: reviewing themes;  
Phase 5: defining and naming themes; and  
Phase 6: producing the report.

This study employs inductive or data-driven thematic analysis to analyse all the qualitative data. The guidelines stated above were applied flexibly and tailored to different data sources. How thematic analysis was actually used, is discussed in greater detail in Chapter 4, where examples are provided.

3.5.2 Statistical analysis
The test scores were analysed using the Statistical Package for Social Sciences (SPSS) version 18. Comparisons were made using two-tailed, independent sample t-tests to find out if there were any significant statistical differences between the Mandarin test scores for the control and experimental groups for both Years 2/3 and Year 4. The results of these analyses were used to assess the effectiveness of embedded assessment strategies. Comparisons were also made between all four classes using one-way ANOVA, to see if there were any statistically significant differences between any of the test scores.

3.6 Ethics
When conducting this study, ethical considerations were taken into account to protect the well-being and interests of research participants (Stringer, 2008, p. 44). This study was carefully designed at every stage to ensure the safety and respect of each participant.

Informed consent was ensured by providing a comprehensive information sheet with each consent form. Informed consent is an important principle that “will form the basis of an implicit contractual relationship between the researcher and the researched and will serve as a foundation on which subsequent ethical considerations can be structured” (Cohen et al., 2007, p. 53). Individuals are informed of the purpose and procedures of the research, expected benefits, discomforts and risks, if any, by informed consent. Individuals are also provided with an offer to participate in
the study. After being informed of all the above facts and fully understanding them, individuals were free to choose to be part of the study or not. Participants were also free to withdraw from the study at any time without prejudice.

In this study most of the participants were children and therefore more vulnerable than adults. Consequently, permission was sought from their parents or care-givers, as well as the children themselves. Due to the young age of the participants, an age appropriate dialogue sheet was prepared, in addition to the information sheet. This age appropriate dialogue was read to participants before they signed the consent form. This was an additional step to help ensure that each student understood what they were consenting to participate in. The study was conducted as part of children’s regular Mandarin learning and the same relationships existed between the teacher-researcher and students whether students participated in the study or not. Each student experienced the full range of activities and games and embedded assessment. However, data from non-participating students was not used as part of the study.

Before undertaking the study, access to the school in which the study was to be conducted was sought. This included the NSW Department of Education and Training (DET) as well as the school Principal. Permission was also sought from each classroom teacher whose class was to participate in the study.

The ‘cost/benefit ratio’ is a key issue in ethics. Researchers have to “consider the likely social benefits of their endeavours against the personal costs to the individuals taking part” (Frankfort-Nachmias & Nachmias, as cited in Cohen et al., 2007, p. 52). This study did no harm to any participant. Participants and the site of this study were respected. The teacher-researcher voluntarily taught Mandarin at the study site and the study was conducted in Mandarin classes so that the study site was not disturbed. This study used a quasi-experimental design. Data were collected from both control groups and experimental groups. While learning Mandarin, students of all groups were provided with a broad range of activities and games that interested and motivated them so that they benefited from activities and games that engaged them in learning Mandarin. The difference between the control groups and the experimental groups was that assessment was embedded in the activities and games of the experimental groups. The control groups were not disadvantaged, because they
experienced normal classroom practices which would have existed without the study taking place. No group was disadvantaged. Normally, students learn Mandarin using summative assessment or no assessment. However, in this project all students had the advantage of being motivated and interested in learning Mandarin while being taught using activities and games. Interviews were conducted in a caring and professional way so that interviewees were put at ease by the whole process.

The research benefited all participants and the wider community. Each lesson was carefully constructed to maximise student interest and motivation so that students were engaged in learning Mandarin. In the case of the experimental classes, assessment strategies were integrated into the activities and games to provide instant feedback about student learning. Consequently, this study provided students with a series of high quality lessons as well as a mechanism for both the teacher and students to monitor learning progress. Under normal routines, students learn Mandarin with only summative assessment. Consequently, all students were engaged in learning Mandarin through interesting and motivating lessons as well as, in the case of experimental classes, gaining an insight into how well they were learning. Therefore, students in experimental classes could monitor their progress and improve their learning outcomes.

Teachers involved in this study also benefited because they gained insights into the role of activities and games in teaching and assessment. The teacher-researcher also learnt about using activities and games and embedded assessment, to more effectively promote student learning of Mandarin.

While participating in this research, all the VTRs in the ROSETE project shared a common experience of research as a way of learning how to improve their ability to teach. Teachers and students in China will also benefit because the teacher-researcher intends to take back to China and implement what she has learnt. The education community as a whole will benefit, not just from access to a series of lessons that integrate embedded assessment but from an evaluation of the effectiveness of embedded assessment in promoting learning.
All information obtained during the study will remain confidential. The data gathered were stored in a secure filing cabinet in the UWS Centre for Educational Research. In the dissemination of research results, the anonymity of the study site and participants will be ensured so that the study site and participants will not be identified. In addition, any text written that describes the sample or the study site will not specifically identify them.

3.7 Validity and reliability

Validity and reliability are important in research. All methods used to collect and analyse data were carefully selected to maximise the validity and reliability of the study. However, validity and reliability can be threatened in a number of ways. Consequently, the teacher-researcher employed a series of techniques to address the threats, to make data as valid and reliable as possible, thereby supporting the credibility of the study findings.

3.7.1 Validity

Validity is crucial to effective research. Validity is a test of whether the data collected will accurately gauge what is being measured (Mills, 2007). This study is a qualitative inquiry. “Qualitative validity means that the researcher checks for the accuracy of the findings by employing certain procedures” (Gibbs, as cited in Creswell, 2009, p. 190). Qualitative data validity can be addressed through the honesty, depth, richness and scope of the data collected, the participants approached, the extent of triangulation and the objectivity of the research (Winter, as cited in Cohen et al., 2007, p. 133). To ensure qualitative validity, the following strategies were employed:

- Triangulation of data. Creswell (2009) suggests that researchers, “(t)riangulate different data sources of information by examining evidence from the sources and using them to build a coherent justification for themes” (p. 191). Data were collected through eight sources, including observations, discussions, interviews, tests, feedback and reflections. The teacher-researcher cross-checked and compared data from each of these sources to
gain confidence of data validity.

- Member checking. “Use member checking to determine the accuracy of the qualitative findings” (Creswell, 2009, p. 191). The transcribed interviews or specific descriptions were taken back to participants, providing them with an opportunity to ensure their accuracy.

- Prolonged engagement in the field with persistent observation (Lincoln & Guba, 1985). Eighteen months were invested in the study to achieve an in-depth understanding of the study context and to build a relationship of trust with participants. A large number of observations and interviews were conducted every week following a systematic template.

- Peer examination. A panel of supervisors served as peer examiners to review and question the research before it took place.

- Clarification of bias. A diversity of students participated in this study, to avoid any likelihood that only students who were positive about learning Mandarin served as a data source. This study invited participation from all students in each of the four classes, regardless of their background or personal views.

This study used a quasi-experimental design. This is because there were a number of conditions that could ‘cloud’ the conduct of the design (Cohen et al., 2007). The main threats to internal validity concerned participants and the experiences they might have at the time of the study. This is because the study is ‘naturalistic’ in nature. It occurred in real classrooms in the real world of schools where any two classes may have different experiences.

Nevertheless, threats to validity in this study were addressed carefully:

- History refers to preceding events in addition to any single event about which data is being collected and therefore may influence teaching and consequently may unduly influence the outcome (Creswell, 2009). The teacher-researcher identified these events and documented any influence they may have.

- Selection of participants was pre-determined, because students were already in pre-existing classes determined prior to the study. Although randomisation
ensures effective matching of control and experimental groups, in practice it is hard to achieve when there are a limited number of classes from which to choose (Cohen et al., 2007). Classes were matched as closely as possible to minimise this difference, ruling out extraneous variables as much as possible. However, it is acknowledged that some differences existed as a consequence of the normal differences between classes.

- Compensatory rivalry means that participants in the control group may feel they are being disadvantaged compared with those in the experimental group, because they may become aware of the differences in teaching (Creswell, 2009). In this study, the teacher-researcher provided participants in both the experimental groups and control groups with activities and games to engage them in learning Mandarin that were as similar as possible.

3.7.2 Reliability

Reliability is a necessary but insufficient condition for validity in research; reliability is a necessary precondition of validity. Reliability is the degree to which a test consistently measures whatever it measures (Mills, 2007, p. 94). Qualitative reliability indicates that the research approach is ‘consistent’, ‘dependable’ and ‘transferable’ (Gibbs, as cited in Creswell, 2009, p. 190).

The data collection process followed a two-weekly cycle in a consistent and rigorous manner. Data sources were collected systematically. The teacher-researcher used interview schedules to conduct interviews with teachers and students at the end of the study. Questions and their explanations were carefully formulated so that interviewees were able to understand what information was being asked of them. Raw data were distinguished from analysed data. The teacher-researcher checked the interview and discussion transcripts. All the transcriptions were sent back to each and every respondent to be member-checked.

The reader is provided with thickly detailed descriptions, so that this study can be compared with others. The research processes are clearly defined and open to scrutiny.
3.8 Generalisability

Mills (2007, p. 96) defines generalisability as “the applicability of findings to settings and contexts different from the one in which they were obtained, that is, based on the behaviour of a small group of individuals, researchers try to explain the behaviour of a wider group of people”.

This study was informed by action research processes, even though it was essentially conducted in a teacher-as-researcher methodological framework. In contrast to empirical positivistic studies, action research studies have been viewed as less generalisable. They are “localized and conducted with an existing group of people, who may or may not represent a random selection from a larger population” (Pine, 2009, p. 89). Mills (2007) suggests that generalisability is not applicable to action research, due to its highly contextualised nature. In this case, there were specific elements that made this context unique. There were some ‘un-eliminated contextual variables’ in this study. Moreover, this study attempted to answer the question whether assessment strategies could be embedded in classroom activities and games to promote student learning of Mandarin more effectively. Consequently, there was a cultural element embedded in this study – the culture of the school, and classrooms under study. Therefore, the findings were characterised by a specific context and are not necessarily generalisable to other schools or classroom contexts.

However, many researchers claim that action research projects can be generalised (Kember, 2000; Lomax, 1994; Elliott, 1991). “Teachers who wish to use the results of an action research study would make judgements about the similarities between their own contexts and situations and that of the research” (Pine, 2009, p. 90). The way this can be achieved is when sufficiently rich descriptions of the action research study are provided so that other researchers are able to judge whether it is relevant to their situation (Lomax, Stevenson, as cited in Pine, 2009). If this study provides sufficient information about its methodology, findings and assertions, teachers will be able to gain an insight into the effectiveness of activities and games and embedded assessment as a way of promoting student learning. Teachers themselves will be able to draw an analogy between this study and their own teaching. Moreover,
this study will make a contribution to the field of educational research by bringing a new perspective to the role of activities and games and embedded assessment.

3.9 Conclusion

This chapter has outlined and justified the methodology used for this study. The chapter outline has included the research design, the theoretical basis of the research methodology, the methodological approach, data collection, data analysis, ethics, validity and reliability, and generalisability. The research design used a teacher-as-researcher theoretical basis, and incorporated an action research component. Within a quasi-experimental research design, observations, interviews, feedback sheets, reflective journals and summative tests were used to collect data in order to describe and evaluate the effectiveness of embedded assessment. Quantitative data were analysed empirically, and qualitative data were analysed thematically, with themes being generated from the data analysis. Chapter 4 analyses all data and reports the study findings.
Chapter 4: Results

4.1 Introduction

This chapter reports the data analysis of summative tests, student interviews, teacher interviews, the teacher-researcher reflective journal, and teacher feedback. The summative tests were analysed quantitatively, while the remaining data were analysed qualitatively. The summative test analysis provides an overall indication of the level of achievement reached by the control and experimental groups at the end of the study. The qualitative data attempts to explain the quantitative findings, understand the reasons for them and the meanings behind them. It also provides additional data about using activities and games to promote student learning and embedded assessment as a component of classroom learning.

The findings from the analysis of student summative tests are reported at 4.2. The findings from student interviews are reported at 4.3, followed by the analysis of teacher interviews at 4.4, the teacher feedback sheets at 4.5, and the teacher-researcher reflective journal at 4.6. The qualitative data analysis is drawn together and summarised at 4.7. The quantitative and qualitative data analyses complement each other to answer the research questions. Consequently, at the end of this chapter, all data analyses are organised and reported in terms of the research questions. It needs to be made clear that reporting the research findings in terms of the research questions is an organisational strategy only. Data were not analysed in terms of the research questions, they were simply used as an organisational tool.

4.1.1 Quantitative Data

Summative tests were conducted with both sets of control and experimental groups. Years 2/3 students in the control and experimental groups received the same test, while Year 4 students in the control and experimental groups were also examined with the same test. However, each age group received a different test, appropriate to their age group and reflecting the work completed in class. The tests were used as a measure of how well students in the different groups learnt during the 13 week study. A copy of each test is provided in Appendixes 1 and 2. The test results were analysed
using the Statistical Package for Social Sciences (SPSS) version 18. Data were entered for each student and used to generate group means, standard deviations and a standard error mean. Means were then compared for statistically significant difference, using independent sample t-tests and one-way ANOVA.

4.1.2 Qualitative data

Student interviews, teacher interviews, teacher feedback sheets, and the reflective journal of the teacher-researcher composed the qualitative data. These data sources combined to provide a rich, multi-angled description of embedding formative assessment in classroom activities and games to promote student learning of Mandarin. All the qualitative data were analysed thematically (Boyatzis, 1998; Braun & Clarke, 2006), with themes emerging independently from each of the different data sources.

4.2 Summative tests

This section reports the analysis and findings of the summative tests for the control and experimental groups for Years 2/3 and Year 4. The results for the independent sample t-tests and one-way ANOVA are reported along with initial interpretations. As this study was a naturalistic study taking place in existing classrooms, there were extraneous and random factors operating, which contributed to differences between control and experimental groups, apart from the main variable – embedded assessment. As a result, students were not able to be paired in an attempt to control for these factors. Consequently, students in control and experimental groups were independent of each other. Therefore, independent sample t-tests were used. Tables 4.1 and 4.2 show the descriptive statistics and the t-test outputs for the Years 2/3 control and experimental groups respectively.
Table 4.1  Descriptive statistics for Years 2/3 control and experimental groups

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Skewness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control Score</td>
<td>22</td>
<td>6.00</td>
<td>85.00</td>
<td>49.2727</td>
<td>20.93796</td>
<td>-.134</td>
</tr>
<tr>
<td>Valid N (listwise)</td>
<td>22</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Experimental Score</td>
<td>19</td>
<td>13.00</td>
<td>73.00</td>
<td>50.4737</td>
<td>17.36653</td>
<td>-.570</td>
</tr>
<tr>
<td>Valid N (listwise)</td>
<td>19</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 4.2  Results of the independent sample t-test for Years 2/3 control and experimental groups

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Std. Error Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Score</td>
<td>Control</td>
<td>22</td>
<td>49.2727</td>
<td>20.93796</td>
</tr>
<tr>
<td></td>
<td>Experimental</td>
<td>19</td>
<td>50.4737</td>
<td>17.36653</td>
</tr>
</tbody>
</table>

Independent Sample t Test

<table>
<thead>
<tr>
<th>Score</th>
<th>Equal variances assumed</th>
<th>Equal variances not assumed</th>
</tr>
</thead>
<tbody>
<tr>
<td>F</td>
<td>1.527</td>
<td>38.948</td>
</tr>
<tr>
<td>Sig.</td>
<td>.224 (.198)</td>
<td>.044 (.201)</td>
</tr>
<tr>
<td>t</td>
<td>-.198</td>
<td>-.201</td>
</tr>
<tr>
<td>df</td>
<td>39</td>
<td>38.948</td>
</tr>
<tr>
<td>Mean Difference</td>
<td>-.120096</td>
<td>-.120096</td>
</tr>
<tr>
<td>Std. Error Difference</td>
<td>6.06693</td>
<td>5.98337</td>
</tr>
</tbody>
</table>
A two-tailed, independent sample t-test was performed to determine whether Years 2/3 students in the experimental group achieved a significantly different summative test score in their Mandarin test from those in the control group. There were 22 control group students and 19 experimental group students. Two assumptions needed to be checked before the t-test could be carried out. The first was that the test scores are normally distributed, and the second was homogeneity of variance. These assumptions needed to be checked because the sample size for both groups was less than 30 (Pallant, 2007). The skew ratio was found to be 0.273 for the control group and 1.088 for the experimental group. Consequently, the normality assumption is tenable, because the skew ratio for each group is low. As the sample size for the control group is not equal to that of the experimental group, Levene’s test was performed to check for homogeneity of variance (Pallant, 2007). The result of Levene’s test for equality-of-variances indicates tenability of this assumption because \( p = 0.224 \), is greater than the required \( \alpha = 0.05 \).

The mean score for the control group (\( M = 49.2727, \ SD = 20.93796 \)) is statistically close to that for the experimental group (\( M = 50.4737, \ SD = 17.36653 \)). Students in the control group achieved almost as well as those in the experimental group. However, there was a small difference of 1.2010 from the control group to the experimental group. It also seems that the test scores for the control group had a slightly wider range than those of the experimental group. The results of the independent sample t-test shows that \( t (39) = 0.198 \) with \( p = 0.884 \) (Pallant, 2007). The fact that \( p > 0.05 \) means there is no significant difference between the mean scores for the control and experimental groups. The 95 percent CI also supports no significant difference, as zero is inside the range from –13.4724 to 11.07058. Hence, it can be concluded that Years 2/3 students in the control group achieved Mandarin test scores which were, statistically, the same as those of the experimental group.

The descriptive statistics and output of the t-test for Year 4 control and experimental groups are shown in Tables 4.3 and 4.4 respectively.
Table 4.3  Descriptive statistics for Year 4 control and experimental groups

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Skewness Statistic</th>
<th>Std. Error</th>
</tr>
</thead>
<tbody>
<tr>
<td>control group</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Score</td>
<td>23</td>
<td>20.00</td>
<td>93.00</td>
<td>69.8696</td>
<td>21.11721</td>
<td>-1.027</td>
<td>.481</td>
</tr>
<tr>
<td>Valid N (listwise)</td>
<td>23</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>experimental group</td>
<td>24</td>
<td>8.00</td>
<td>94.00</td>
<td>64.5000</td>
<td>22.84732</td>
<td>-.942</td>
<td>.472</td>
</tr>
<tr>
<td>Score</td>
<td>24</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Valid N (listwise)</td>
<td>24</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 4.4  Results of independent sample t-test for Year 4 control and experimental groups

<table>
<thead>
<tr>
<th>Group Statistics</th>
<th>Group</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Std. Error Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Score</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>control group</td>
<td>23</td>
<td>69.8696</td>
<td>21.11721</td>
<td>4.40324</td>
<td></td>
</tr>
<tr>
<td>experimental group</td>
<td>24</td>
<td>64.5000</td>
<td>22.84732</td>
<td>4.66369</td>
<td></td>
</tr>
</tbody>
</table>

Independent Sample t-Test

<table>
<thead>
<tr>
<th>t-test for Equality of Means</th>
<th>Levene's Test for Equality of Variances</th>
<th>95% Confidence Interval of the Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>F</td>
<td>Sig.</td>
</tr>
<tr>
<td>Score Equal variances assumed</td>
<td>.118</td>
<td>.732</td>
</tr>
<tr>
<td>Equal variances not assumed</td>
<td>.837</td>
<td>.4944</td>
</tr>
</tbody>
</table>
The same independent sample t-test was performed to determine whether the achievement of the Year 4 experimental group students was different to that of the control group students. Because there were 23 control group students and 24 experimental group students, and both the sample sizes were smaller than 30, the tenability of the normality assumption needed to be checked (Pallant, 2007). In this case, the control group distribution was negatively skewed, with a skew ratio of 2.135 while, although the experimental group skew ratio is large, it is tenable at 1.996. Consequently, because the sample size is adequate for both sample (Tabachnick & Fidell, 2007) and because the technique is reasonably robust, the violation of this assumption by the control group should not cause major problems. Levene’s test for homogeneity-of-variances (p = 0.732) was greater than 0.05. This indicates that the assumption of equal variance for the two groups was met (Pallant, 2007).

The mean for the control group is 69.8696 and the mean for the experimental group is 64.5000. In this case there is a decrease of 5.3696 from the control group to the experimental group. Students in the control group achieved a higher test score than those in the experimental group. The purpose of the t-test was to see if this difference is statistically significant. The SD for the control group is 21.11721 and the SD for the experimental group is 22.84732. The control group has a slightly smaller score spread than the experimental group. In this case, t (45) = 0.836 and p = 0.408. Consequently, because p > 0.05, there is no significant difference in terms of the mean scores between Year 4 control and experimental groups (Pallant, 2007). Since zero falls within the 95 percent CI (-7.57086 to 18.90999), it is indicative of no significant difference. Therefore, it may be concluded that any difference between the two groups is likely to be caused by ‘chance’.

After it was found that there were no statistically significant differences between test scores for the control and experimental groups for both age groups, the mean scores for all four different groups were compared, to determine whether there were any statistically significant differences among them. A one-way ANOVA was used to make this determination. A one-way ANOVA is used to “compare unrelated means of an at least interval-level variable for two or more independent groups” (Weinberg & Abramowitz, 2009, p. 673). ‘Group’ was used as the ‘grouping variable’ and
‘score’ was used as the ‘dependent variable’. The four groups were the Years 2/3 control group, the Years 2/3 experimental group, the Year 4 control group and the Year 4 experimental group.

![Boxplot score distributions for the four groups](image)

Figure 4.1   Boxplot score distributions for the four groups

Based on the boxplot score distributions, the normality assumption appears to be tenable for all four groups because the test score distributions are reasonably symmetric and the sample sizes for all four groups are adequate (Tabachnick & Fidell, 2007). However, there is one outlier: a very different score compared with the other scores, in the Year 4 control group, but because the technique is reasonably robust this should present no major problem.

Tables 4.5 and 4.6 respectively show the descriptive statistics for the four groups and the results of the one-way ANOVA test.
Table 4.5  Descriptive statistics for the four groups

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Skewness Statistic</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Year 2/3 control</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Score</td>
<td>22</td>
<td>49.2727</td>
<td>20.93796</td>
<td>-.134</td>
</tr>
<tr>
<td>Valid N (listwise)</td>
<td>22</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Year 2/3 experimental</td>
<td>19</td>
<td>50.4737</td>
<td>17.36653</td>
<td>-.570</td>
</tr>
<tr>
<td>Score</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Valid N (listwise)</td>
<td>19</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Year 4 control</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Score</td>
<td>23</td>
<td>69.8696</td>
<td>21.11721</td>
<td>-1.027</td>
</tr>
<tr>
<td>Valid N (listwise)</td>
<td>23</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Year 4 experimental</td>
<td>24</td>
<td>64.5000</td>
<td>22.84732</td>
<td>-.942</td>
</tr>
<tr>
<td>Score</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Valid N (listwise)</td>
<td>24</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 4.6  Results of one-way ANOVA test

<table>
<thead>
<tr>
<th>Score</th>
<th>Levene Statistic</th>
<th>df1</th>
<th>df2</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>.495</td>
<td>3</td>
<td>84</td>
<td>.687</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Score</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Between Groups</td>
<td>3</td>
<td>2301.961</td>
<td>5.305</td>
<td>.002</td>
</tr>
<tr>
<td></td>
<td>Within Groups</td>
<td>84</td>
<td>433.949</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>87</td>
<td>43357.591</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Skewness statistics were used to evaluate the normality assumption, because no group had at least 30 students. Again, all groups except the Year 4 control group had a skew ratio (skewness statistic divided by the standard error of the skewness) less than 2.0, indicating that the assumption of normality, although not strictly met,
should provide no major impediment to the ANOVA being carried out. From the table of descriptive statistics, the standard deviations are relatively homogeneous for all four groups. In addition, tenability of the homogeneity-of-variance assumption is further supported by Levene’s test $p = 0.687$ ($p > 0.05$).

The ANOVA summary table shows $F (3, 84) = 5.305$ with $p < 0.05$. This result is indicative of significant difference with $SS_B/SS_T = 6905.882/43357.591 = 15.9$ percent, suggesting that the different groups themselves had a medium effect on student Mandarin test scores. Since the results of the ANOVA are statistically significant and more than two independent means are being compared, a post-hoc test is necessary to determine where the significant differences lie. The results of the Bonferroni post-hoc test are shown in Table 4.7.

Table 4.7 Bonferroni post-hoc test results

<table>
<thead>
<tr>
<th>(l) Group</th>
<th>(J) Group</th>
<th>Mean Difference (I-J)</th>
<th>Std. Error</th>
<th>Sig.</th>
<th>95% Confidence Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yr 2/3 control</td>
<td>Yr 2/3 experimental</td>
<td>-1.20096</td>
<td>6.52414</td>
<td>1.000</td>
<td>-18.8303--16.4284</td>
</tr>
<tr>
<td>Yr 4 control</td>
<td>-20.59684</td>
<td>6.21227</td>
<td>.008</td>
<td>-37.3835--3.8102</td>
<td></td>
</tr>
<tr>
<td>Yr 2/3 experimental</td>
<td>Yr 2/3 control</td>
<td>1.20096</td>
<td>6.52414</td>
<td>1.000</td>
<td>-16.428418.8303</td>
</tr>
<tr>
<td>Yr 4 control</td>
<td>-19.39588</td>
<td>6.45808</td>
<td>.021</td>
<td>-36.84671.9450</td>
<td></td>
</tr>
<tr>
<td>Yr 4 control</td>
<td>Yr 2/3 control</td>
<td>20.59684</td>
<td>6.21227</td>
<td>.008</td>
<td>3.810237.3835</td>
</tr>
<tr>
<td>Yr 2/3 experimental</td>
<td>19.39588</td>
<td>6.45808</td>
<td>.021</td>
<td>1.945036.8467</td>
<td></td>
</tr>
<tr>
<td>Yr 4 experimental</td>
<td>5.36957</td>
<td>6.07853</td>
<td>1.000</td>
<td>-11.055721.7948</td>
<td></td>
</tr>
<tr>
<td>Yr 4 experimental</td>
<td>Yr 2/3 control</td>
<td>15.22727</td>
<td>6.14867</td>
<td>.092</td>
<td>-1.387531.8421</td>
</tr>
<tr>
<td>Yr 2/3 experimental</td>
<td>14.02632</td>
<td>6.39692</td>
<td>.187</td>
<td>-3.259331.3119</td>
<td></td>
</tr>
<tr>
<td>Yr 4 control</td>
<td>-5.36957</td>
<td>6.07853</td>
<td>1.000</td>
<td>-21.794811.0557</td>
<td></td>
</tr>
</tbody>
</table>

* The mean difference is significant at the 0.05 level.
It would be expected that Year 4 student Mandarin test scores would be higher than those for Years 2/3. This was found to be the case. In addition, the ANOVA test confirmed that, in the case of the Year 4 control group, the difference was statistically significant. The Year 4 control group scored statistically significantly higher in the test than students in both the Years 2/3 control and experimental groups. There were no other statistically significant differences detected by the ANOVA using the Bonferroni post-hoc test. However, the mean score for the Year 4 experimental group was much higher than that for the Years 2/3 control and experimental groups. Therefore, Year 4 students did score higher than the Years 2/3 students in general.

4.3 Student interviews

Three students from each of the four groups participated in the interviews at the end of the 13 week study. Overall, there were 12 student participants interviewed. The purpose of the student interviews was to capture their views about activities and games, embedded assessment, and learning Mandarin. Student participants from the control groups answered six questions about using activities and games in learning Mandarin. Student participants from the experimental groups answered ten questions. Six of these questions were the same as those answered by the control group, while the additional four questions were specifically about embedded assessment. Consequently, there were two data groups, control and experimental, for each of the two age groups.

Within each data group, responses from Years 2/3 students and Year 4 students were analysed separately. Responses were analysed question by question. However, the findings for both age groups were reported as a combined summary. Similar themes between Years 2/3 and Year 4 students were combined, indicating areas in common across the age groups. However, although this strategy was used to condense or reduce data, where different themes for an age group were identified, they were maintained to indicate the differences between the two age groups.
4.3.1 Control groups

The six questions answered by the six students interviewed were about using activities and games to help them learn Mandarin. Initially, data were analysed as it was collected: that is, by age group, as a focus group interview. The analysis of responses was rigorous and systematic. The unit of data to be analysed was a sentence. So, sentence by sentence data were transcribed to a text column. The sense of the sentence, as interpreted by the teacher-researcher, was then summarised in the next column. This data was then categorised according to its focus in the third column. The categories that emerged from the data were highlighted by different colours: turquoise for activities, yellow for student learning, gray for teaching, pink for lesson, bright green for embedded assessment, and red for time. The theme was identified in the last column. A detailed example showing how this was done is provided in Figure 4.2. In this example, responses to Question 1 for the three participants in the Years 2/3 control group are shown. The same process was carried out question by question for each of the six questions that composed the interview.

<table>
<thead>
<tr>
<th>Control Group Years 2/3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q1: What do you think about Mandarin lessons?</td>
</tr>
<tr>
<td>Text</td>
</tr>
<tr>
<td>I think the activities we do are fun. (Cory)</td>
</tr>
<tr>
<td>But I just can’t understand the words, like the reading of it.</td>
</tr>
<tr>
<td>And I forgot lots of the things.</td>
</tr>
<tr>
<td>We get taught, like I can only remember the basic things 你好, 澳大利亚.</td>
</tr>
</tbody>
</table>
Figure 4.2 Analysis of raw data for interview Question 1, Years 2/3 control group

This process condensed the raw data for each interview question into themes. The themes emerged from the data rather than being pre-determined. For Question 1, three main themes were identified. However, these themes were divided into sub-themes, to indicate the different reasons given for the theme identified. Reasons are included as part of the theme outcome. The term ‘general’ is used when a reason was not provided. Figure 4.3 illustrates the theme outcome for Question 1.
Figure 4.3 Theme outcome for interview Question 1, Years 2/3 control group

Figure 4.4 identifies each of the three themes according to their main focus. However, these themes are for a single, individual question. They do not constitute themes that have emerged from across an entire interview. Since one of the purposes of thematic data analysis is data reduction, while not losing data, the themes identified may be further refined, in an attempt to achieve a more insightful perspective when combined with the analyses of other interview questions. Consequently, the themes identified from the analysis of each question will be referred to as theme focuses. ‘Themes’ will be the term used to describe the refined theme focuses at the end of each data source analysis.

Figure 4.4 Theme focuses for interview Question 1, Years 2/3 control group

The responses of the Year 4 control group for interview Question 1 were analysed using exactly the same procedure. The three theme focuses identified are shown in Figure 4.5.

Figure 4.5 Theme focuses for interview Question 1, Year 4 control group
The theme focuses identified from Years 2/3 and from Year 4 control groups for Question 1 were then combined. Some theme focuses were found to be very similar. However, theme focuses that were different were recorded as being different. A summary of theme focuses for Question 1 across both control groups is shown in Figure 4.6.

- Students liked Mandarin lessons.
- Activities engaged students because they were fun.
- Student learning was difficult for Years 2/3 because of their inability to read Mandarin and poor memory.
- Year 4 students liked learning Mandarin because it was a different language.

Figure 4.6 Theme focuses for interview Question 1, control groups

After analysing the responses for each of the six questions in the same way as described above, the theme focuses for both control group interviews were identified as shown in Figures 4.7 and 4.8. Figure 4.7 shows the theme focuses that were in common across both groups, while Figure 4.8 shows those that were different between the two age groups. Although the analysis was carried out to collapse data, the process did not lose data.

- Students liked Mandarin lessons.
- Activities were good.
- Activities and games engaged students because they were fun, students were able to relate to them and they promoted creativity.
- Activities and games promoted learning because they helped students use the language; they made learning easier; they helped students remember information; they expanded their learning; they promoted learning autonomy and creativity and they acted as a form of repetition. They were fun and built on existing student knowledge.

Figure 4.7 Theme focuses that were shared across both control group interviews

- There were difficulties with learning because students found it difficult to read and remember Mandarin (Years 2/3 only).
- Students liked learning Mandarin because it was a different language (Year 4 only).
- Activities and games that were not challenging did not promote learning (Year 4 only).
- Time limitations affected the effectiveness of Mandarin learning (Year 4 only).

Figure 4.8 Theme focuses that were different across the control group interviews
4.3.2 Experimental groups

The six student participants answered 10 questions. As with the control groups, six questions were about the use of activities and games in Mandarin learning. The additional four questions were about embedded assessment, since embedded assessment was the only variable between experimental and control groups. The analysis of responses from participants in the experimental groups followed exactly the same procedure as the control group. Consequently, two sets of theme focuses were generated from each of the different age groups.

Figure 4.9 shows the theme focuses generated from the entire student interview for the Years 2/3 Experimental Group.

- Mandarin lessons were fun.
- Students liked to learn a new language.
- Activities were good.
- Activities and games engaged students because they were fun, new, drew on past experiences, had good variety, and promoted autonomy in learning and creativity.
- Activities and games promoted learning because they used the language, helped students remember the language, involved group work and used worksheets.
- Students felt they were being assessed.
- Some students did not think they received feedback, even though they did.
- Students felt positive about assessment because they could practise when they had more time.
- Embedded assessment and feedback helped students know how well they were learning.
- Feedback promoted student learning because it stimulated thinking, helped students understand what they were learning, helped them remember what they were learning and helped them improve.
- Mandarin was hard to learn.

Figure 4.9 Theme focuses for Years 2/3 Experimental Group, student interview

Figure 4.10 shows the theme focuses generated from the entire student interview for the Year 4 Experimental Group.

- Mandarin lessons were fun.
- Students liked to learn a new language.
- Students could use the new language in the future.
- Activities were good.
- Activities and games engaged students because they were fun.
- Activities and games promoted learning because they used the language, helped students remember the language, and promoted repetition.
- Students felt they were being assessed.
- Students felt positive about assessment.
- Embedded assessment and feedback helped students know how well they were learning.
• Feedback promoted student learning because it helped them improve.
• Some students complained about not receiving an assessment result or score as part of their feedback.
• Students did not know how to improve their learning from the feedback provided.

Figure 4.10 Theme focuses for Year 4 Experimental Group, student interview

The theme focuses for both experimental group interviews are shown in Figures 4.11 and 4.12. Figure 4.11 shows the theme focuses that were in common across both age groups, while Figure 4.12 shows those that were different between the two age groups.

• Mandarin lessons were fun.
• Students liked to learn a new language.
• Activities were good.
• Activities and games engaged students because they were fun, new, they drew on past experiences, had good variety, promoted autonomy in learning and creativity.
• Activities and games promoted learning because they used the language, helped students remember the language, involved group work, used worksheets and promoted repetition.
• Students felt they were being assessed.
• Students felt positive about assessment.
• Embedded assessment and feedback helped students know how well they were learning.
• Feedback promoted student learning because it stimulated thinking, helped students understand what they were learning, helped them remember what they were learning and helped them improve.

Figure 4.11 Theme focuses that were shared across both experimental group interviews

• Mandarin was hard to learn (Years 2/3 only).
• Some students did not think they received feedback even though they did. (Years 2/3 only).
• Students could use the new language in the future (Year 4 only).
• Some students complained about not receiving an assessment result or score as part of their feedback (Year 4 only).
• Students did not know how to improve their learning from the feedback provided (Year 4 only).

Figure 4.12 Theme focuses that were different across both experimental group interviews

4.3.3 Overall themes for student interviews

The theme focuses for both the control and experimental groups were combined to identify the themes that emerged from the student interviews. Tables 4.8 and 4.9 show the overall themes for the student interviews. Table 4.8 shows the themes that
were in common across the control and experimental groups. It should be remembered that the themes that emerged about assessment were from the experimental groups only. Table 4.9 shows the differences that emerged for the student interviews across the control and experimental groups. These differences are divided into two parts. The first is for differences between the different age groups and the second shows the differences between the different age groups for the experimental groups, since all the differences stated relate to assessment.

Table 4.8 Themes that were in common across student interviews

<table>
<thead>
<tr>
<th>Themes in Common Across Control and Experimental Groups</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Theme</strong></td>
</tr>
<tr>
<td>Students liked Mandarin lessons.</td>
</tr>
<tr>
<td>Students thought activities and games were good.</td>
</tr>
<tr>
<td>Activities and games engaged students.</td>
</tr>
<tr>
<td>Activities and games promoted student learning.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Themes in Common Across Experimental Groups</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Theme</strong></td>
</tr>
<tr>
<td>Students felt they were being assessed.</td>
</tr>
<tr>
<td>Students felt positive about assessment.</td>
</tr>
<tr>
<td>Embedded assessment and feedback helped students know how well they were learning.</td>
</tr>
<tr>
<td>Teacher feedback on student progress promoted student learning.</td>
</tr>
</tbody>
</table>
Table 4.9  Themes that were different between different age groups for student interviews

<table>
<thead>
<tr>
<th>Themes that were Different Across Age Groups for both Control and Experimental Groups</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Theme</strong></td>
</tr>
<tr>
<td>Mandarin was hard to learn.</td>
</tr>
<tr>
<td>Activities and games that were not challenging did not promote learning.</td>
</tr>
<tr>
<td>Time limitations affected effective learning for Year 4 students.</td>
</tr>
<tr>
<td>Students valued learning a new language.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Themes that were Different between Age Groups for Experimental Groups</th>
</tr>
</thead>
<tbody>
<tr>
<td>Some Years 2/3 students did not think they received feedback, which they did.</td>
</tr>
<tr>
<td>Some Year 4 students complained about not receiving an assessment result or score as part of their assessment feedback.</td>
</tr>
<tr>
<td>Some Year 4 students did not know how to improve their learning from the assessment feedback provided.</td>
</tr>
</tbody>
</table>

All the student participants liked Mandarin lessons. For example, Lea said: “I quite like Mandarin lessons; I look forward to them every week” (24/06/2010). Some students went further, giving reasons why they liked Mandarin lessons. Finn’s comment shows this point: “Well, I think they are pretty good. They give me that learning. And there are fun activities to do as well” (30/06/2010). Basically, students liked Mandarin lessons because they not only had fun during the activities and games but were also able to learn a new language.

There was a strong consensus among students that activities and games were good. They were good because they promoted student interest. Students were engaged in
the activities and games because they “had lots of fun” (Tina, 30/06/2010). The fun atmosphere of activities and games seemed to always engage students.

The novelty of activities and games attracted student attention. Students were not familiar with the activities and games used in the study so they were eager to learn about the activity or game and in doing so became engaged in learning Mandarin. For example, John said: “The games we’ve been taught, they are fun games and games that we’ve never played before. And, it’s good to learn the games” (24/06/2010). Researchers have found that novel stimuli heighten student interest (Blumenfeld, as cited in Bergin, 1999).

Engagement was enhanced when students could relate activities and games to themselves. For example, Rachel considered the role play of ordering in a restaurant as her favourite activity because she could relate it to her daily life: “The one where we had to do it like what you’ve ordered . . . like how to order when you go over to that country” (30/06/2010). Finn also liked the role play as well as the menu for breakfast because he liked food: “I like the food one. Food is my favourite subject” (30/06/2010). It seemed that the more activities and games students could relate to, the more they were engaged.

It was found that students were attracted by the variety of activities and games. Heather said: “Because we get to draw sometimes and we play sometimes” (24/06/2010). Engagement promoted autonomy in learning. Students had opportunities to make their own things and be creative in the process. For example, some students liked the activity where they could ‘make up’ their own country. Mark said: “Because you can draw your own flag and draw the things of your own” (24/06/2010). Students liked to bring their own ideas and creative talents to classroom activities and games. Lea commented: “I like these games because we like being a bit creative with some, like the drawing thing” (24/06/2010).

The participants said the activities and games promoted their learning of Mandarin. Through the use of activities and games, participants were able to use the target language more fully. Tina said: “Some of them helped me a lot about how to speak Mandarin and write. Cos, we learnt how to do things in the activities we didn’t know
before” (30/06/2010). After practices in activities and games, students developed an understanding of what they had learnt. Lea commented: “. . . those activities kind of, they give us a better idea of whatever kind of words we’re learning or sentences” (24/06/2010).

Some students found it was good that they could combine their existing knowledge with what they were to learn. For example, Cory said: “But all the sport questions, like there were two people in our group that was good at sport, the same sport, and so we had a chance at that” (24/06/2010). Students built their learning on their previous knowledge.

The activities and games helped students by promoting more autonomy with less reliance on the teacher-researcher. Students were given more room to participate actively in their learning, rather than simply follow the teacher-researcher’s instructions. Students were encouraged to take some responsibility for their own learning. Rachel said:

It’s just sort of better because you got to sort of do it yourself. And like sometimes you get to read it out. It’s like you’re doing it yourself. You get told how to do it and then you memorised the words. And then sort of like you’re doing it, it’s not anyone else (30/06/2010).

A number of participants mentioned that the activities and games reinforced what they had learnt and that this helped them to remember. Finn commented: “Because like I said before, they help me remember what I’ve already put in” (30/06/2010). Worksheets used in the activities and games were effective tools for students to reinforce and remember what they had learnt. Mark was happy with the worksheets because he could ‘get more memory’ as he said he had a bad memory.

Group work was embraced by the students. Group work helped students reinforce their communication skills, as Cory said: “It gets our communication better, like it helps our communication” (24/06/2010). It also offered students opportunities to help each other learn. For example, Mark pointed out: “I can help friends if they need help and other things” (24/06/2010).
The activities and games provided a fun way to practise what students had learnt, which made learning easier. Repetition within the activities and games helped students to master the target language and extend their learning.

Most of the students felt they were being assessed, although no reason was offered for this perception. With assessment, they thought “it’s comfortable” (John, 24/06/2010). There was no anxiety or worry about assessment, as students knew they could practise what they did not know at another time. Mike’s comment illustrated this: “It’s all right. I can go home and work on it. . . . No, I didn’t feel nervous when you asked about the words” (30/06/2010).

The majority of students believed that assessment and feedback informed them about how well they were learning. Students were able to know “what it’s like when it’s right’ and where they ‘did right and wrong” (Mark, 24/06/2010).

Students improved their learning based on feedback. Their thinking was stimulated. For example, John said: “Because they help me learn Mandarin, because well like I tell you and then you tell me if I’m right or wrong. So it will help me like, think” (24/06/2010). Teacher feedback helped students with their learning. When they knew what was right and what was wrong, they were able to practise in response to the feedback they received. Once they made appropriate adjustments, they were able to “get the right word” (John, 24/06/2010). Kurt’s comment summarised the process of how students used feedback to promote learning: “Because like if it’s a no, you just have to try to improve. If it’s a yes, you just have to try to keep remembering it” (30/06/2010).

Nevertheless, Years 2/3 students found Mandarin hard to learn because it was hard to read and remember. Cory complained: “But I just can’t understand the words, like the reading of it. Chinese is hard” (24/06/2010). Mark added: “It’s too hard to remember the words, what the words mean or how to say the countries” (24/06/2010).
Although none of the Year 4 students commented on the difficulty of Mandarin, they did comment that activities and games needed to be challenging to engage them and so promote learning, whereas Years 2/3 students did not say this. For example, Tina was not satisfied: “They’re just fun, but are not, they weren’t as hard as the others. Like, I already knew some of the things in that” (30/06/2010). Students liked challenges and expected that the activities and games would be able to ‘push them more’ and add to what they were learning.

Year 4 students also said the short length of lessons hindered their language learning. Although they did not elaborate on why this was the case, they hoped for more lesson time. Again, this did not seem to be an issue for Years 2/3 students. Finn voiced his concern and suggestions:

   Even though I can remember, I think it’s a bit hard. I think we maybe have it more times so we can get more. So we can do more what we did before. So we don’t forget over the two weeks’ time (30/06/2010).

Year 4 students seemed to recognise that learning another language may be of some future benefit while Years 2/3 students made no comment about their future need for another language. For example, Mike said: “If we go overseas, they (words) might help us. If we learn our country and someone asks what country are you, we can just say it” (30/06/2010). It would seem that Year 4 students had a sense of ‘international awareness’ and possible future need.

While all Year 4 students recognised teacher feedback, Years 2/3 students did not think they received feedback from teachers. Mark said: “No, I can’t remember any what you said – feedback from you” (24/06/2010). According to the teacher-researcher’s field notes, however, he had been given feedback a number of times.

Year 4 students would have preferred that a mark or score was provided by the teacher along with the feedback, although they did not say why they thought this. For example, Santana said: “I just didn’t know the results, what I got” (30/06/2010).
Some Year 4 students were not used to formative assessment, in the form of teacher feedback, and so had not developed the skills to use this feedback and improve their performance. Santana had no idea of what to do with feedback: “I didn’t know how to improve” (30/06/2010).

In summary, Years 2/3 and Year 4 students all liked Mandarin lessons. They supported the use of activities and games as teaching strategies because they were engaging with and promoting Mandarin learning. The students in the experimental groups were aware they were being assessed and felt positive about it. In the majority of cases feedback helped students know how well they were learning and used it to enhance their learning.

There were differences between Years 2/3 and Year 4 students. Years 2/3 students found Mandarin difficult, while some Year 4 students considered the activities and games not challenging enough. Year 4 students felt their learning was affected by limited lesson time. They also valued Mandarin learning for its future use. Some Years 2/3 students thought they did not receive teacher feedback while Year 4 students complained about not receiving scores and did not know how to use feedback to develop learning.

4.4 Teacher interviews

The teachers for each of the four classes participating in the study were interviewed. Each class teacher observed all the Mandarin lessons taught for that class. Therefore, their comments added insights into the use of activities and games and embedded assessment, in the case of the two experimental classes, in promoting student learning of Mandarin. All the teacher participants of both control and experimental classes answered six questions, focusing on the use of activities and games as a teaching strategy to promote Mandarin learning. The teachers of the experimental groups answered two additional questions, about embedded assessment. The analysis of teacher interviews followed the same process as those for the student interviews. Consequently, there were two data groups: control and experimental.
However, it should be noted at the outset that all teachers shared a different view of what constituted an activity and a game, compared with the view of the teacher-researcher. All four teachers regarded anything other than talking to the students and writing on the board as an activity. Even the use of an interactive whiteboard (IWB) was regarded as an activity. However, as far as this study was concerned, the IWB was simply a technology like an ordinary board used to deliver lessons. Essentially, it was a technology for teaching.

Having said this, it is important to recognise that data collected from teachers should be viewed from their perspective rather than that of the teacher-researcher. Consequently, because of this difference in understanding, and to respect the integrity of teacher responses, comments about the use of the IWB as an activity were included in the data analysis. However, it also has to be stated that assessment was not embedded in IWB activities. This fact is also reflected in the data analysis.

4.4.1 Control groups

The two teachers for the control groups answered six questions about using activities and games to promote student learning of Mandarin. A detailed example showing how these questions were analysed is provided in Figure 4.13. In this example, the analysis of Question 3 is shown. The same process was carried out question by question for each of the questions that composed the interview.

<table>
<thead>
<tr>
<th>Teacher Interview for Control Groups</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q3: What do you think about the effectiveness of learning Mandarin?</td>
</tr>
<tr>
<td><strong>Text</strong></td>
</tr>
<tr>
<td>Your strategies are really good, like you repeat the vocabulary over and over again so the children become really familiar with it.</td>
</tr>
<tr>
<td>You relate to everyday experiences.</td>
</tr>
<tr>
<td>The problem is that I’ve just mentioned, half an hour, once a fortnight.</td>
</tr>
<tr>
<td>---------------------------------------------------------------</td>
</tr>
<tr>
<td>The time is not ideal.</td>
</tr>
<tr>
<td>But then by the same token from fortnight to fortnight, they do retain a lot of vocabulary, which is really very good. 4t</td>
</tr>
<tr>
<td>And I think that probably the downfall is not your teaching or anything; it’s just the structure of the way we’ve had it at our school. 2/3 w</td>
</tr>
<tr>
<td>So obviously how effective that is has come down to the structure of our Mandarin program anyway.</td>
</tr>
<tr>
<td>But you know you’re always well-prepared.</td>
</tr>
<tr>
<td>I think if you keep experimenting with different ways of presenting, like you probably use the interactive board with lots of the click and drag and quiz question on the interactive board too for a group of children, you know, those sorts of things. 2w</td>
</tr>
<tr>
<td>I think it’s one of those things, the process at the moment of trying things and seeing how they go.</td>
</tr>
<tr>
<td>And when we get that the other Mandarin teacher overlaps with you, I think that’ll be wonderful.</td>
</tr>
<tr>
<td>You know, to have two of you just for that short time, I think that will help the effectiveness, too.</td>
</tr>
</tbody>
</table>
I think you feel restricted by the time. 2/3 w

| Teaching was restricted by the short time. | Time – restricted teaching | Time was too short |

Figure 4.13 Analysis of raw data for teacher interviews, control groups, Question 3

Three main themes, as theme-focuses, were identified for Question 3. These theme-focuses were divided into sub-themes to indicate the different reasons given for the theme-focuses identified. The term ‘general’ was used when a reason was not provided. Figure 4.14 illustrates the theme-focus outcome for Question 3.

- Student Mandarin learning was effective.
  - Learning was effective because vocabulary was retained

- Good teaching facilitated learning
  - The reasons teaching facilitated learning were because it:
    - provided repetition
    - was relevant to real life
    - was well prepared
    - used a variety of strategies

- Time issue affected the effectiveness of Mandarin learning.
  - General comment
  - Reasons for time affecting learning:
    - time too short
    - school structure
  - Suggestions to address the issue of limited time were to:
    - increase the number of teachers

Figure 4.14 Theme-focus outcome for control teacher interviews Question 3

Figure 4.15 shows the three theme-focuses identified for Question 3. They do not constitute themes that have emerged from across the entire interview nor do they constitute themes identified from interviews with all teachers. The theme-focuses identified may be further refined, to achieve a more insightful perspective, when combined with the analyses of the other interview questions.

- Mandarin learning was effective
- Mandarin learning was facilitated by good teaching.
- Time issue affected the effectiveness of learning Mandarin.

Figure 4.15 Theme-focuses for control teacher interviews Question 3
Figure 4.16 shows the theme-focuses that were in common across the control teacher interviews for all six questions, while Figure 4.17 shows those that were different between the teachers of the two age groups.

- Students enjoyed learning Mandarin.
- Mandarin learning was effective because of the visual and auditory support and repetition provided.
- Activities and games engaged students because they were varied, promoted group work, related to students, were competitive, and created opportunities for success.
- Activities promoted learning because students used Mandarin and the repetition enabled students to practise and understand Mandarin.
- Mandarin learning was facilitated by good teaching because the teacher-researcher had prepared lessons and presented them well, used a variety of strategies, provided repetition and related Mandarin to students.
- There were problems with teaching and suggestions were made for improvement.
- Lack of time negatively influenced the effectiveness of Mandarin learning.

Figure 4.16 Theme-focuses that were shared across control teacher interviews

- Students in Years 2/3 did not enjoy learning Mandarin previously because they were not receptive to another language and were scared by the difficulty of Mandarin, whereas this was not the case for Year 4 students.
- The difficulty with learning Mandarin at an elementary level resulted in poor learning outcomes for Years 2/3 students but this was not thought to be a problem for Year 4 students.

Figure 4.17 Theme-focuses that were different between control teacher interviews

4.4.2 Experimental groups

The two teachers of the experimental classes answered eight questions. Six questions were the same as those for the control teachers, while the two additional questions were designed to gain insights into the teachers’ perceptions about embedded assessment. Like the analysis of the control teacher interviews, two sets of theme-focuses were generated.

The theme-focuses for the experimental teacher interviews are stated in Figures 4.18 and 4.19. Figure 4.18 shows the theme-focuses that were shared across both age groups while Figure 4.19 presents those that were different between the age groups.
- Student enjoyed learning Mandarin.
- Mandarin learning was effective.
- Activities and games engaged students because they were fun, hands-on, varied, and promoted group work.
- Activities and games promoted learning because students used Mandarin, and they helped students reinforce knowledge.
- Mandarin learning was facilitated by good teaching as the teacher-researcher used a variety of strategies, created good learning environments, provided revision, facilitated good transition between classes and had good presentation skills.
- Embedded assessment was good.
- There were problems in the implementation of embedded assessment and suggestions were made to overcome them.
- Feedback to students was good because it showed an appreciation of student effort, provided teacher-student interaction, was instant, kept momentum going, motivated students to learn more, was understood by students, and promoted learning.
- Time issues affected Mandarin learning and suggestions were made to overcome them.

Figure 4.18 Theme-focuses that were shared across experimental teacher interviews

- Embedded assessment was conducted in a more positive learning environment for Year 4 students than for Years 2/3 students.

Figure 4.19 Theme-focus that was different between experimental teacher interviews

4.4.3 Overall themes from teacher interviews

The theme-focuses for both the control and experimental teacher interviews were processed in the same way as for student interviews. Theme-focuses were combined to produce themes, where the essence of theme-focuses was essentially the same. Table 4.10 shows the themes that were shared by both the control and experimental classroom teachers across both age groups, followed by the themes about embedded assessment that were common for the teacher interviews of the experimental classes. Table 4.11 presents the themes that were different across the control and experimental teacher interviews for the different age groups. It shows not only the themes that were different across the two sets of control and experimental teacher interviews, but also the themes that were different between the two experimental teacher interviews, as these themes focused on embedded assessment.
Table 4.10  Themes that were in common across teacher interviews

<table>
<thead>
<tr>
<th>Themes Common Across Control and Experimental Teacher Interviews</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Theme</strong></td>
<td><strong>Reasons for Theme</strong></td>
</tr>
<tr>
<td>Students enjoyed learning Mandarin.</td>
<td>No reason indicated</td>
</tr>
<tr>
<td>Mandarin learning was effective.</td>
<td>Mandarin learning was effective because of visual and auditory support and repetition.</td>
</tr>
<tr>
<td>Activities and games engaged and motivated students.</td>
<td>Activities and games engaged and motivated students because they were fun, hands-on and varied, promoted group work, related to students, promoted competition, and created opportunities for success.</td>
</tr>
<tr>
<td>Activities and games promoted student learning</td>
<td>Activities and games promoted learning because students used Mandarin, and the repetition enabled students to practise and understand Mandarin. Therefore, students reinforced the language.</td>
</tr>
<tr>
<td>Mandarin learning was facilitated by good teaching.</td>
<td>The teacher-researcher used a variety of strategies, created good learning environments, provided revision, and had good preparation, presentation transition, and instruction skills, related Mandarin to students, and provided opportunities for repetition.</td>
</tr>
<tr>
<td>Suggestions to improve pedagogy.</td>
<td>It was suggested that the teacher-researcher collect worksheets so that students realise their work would be purposeful; ask students to distribute materials so as not to lose student focus; balance whole class drill and individual turns; give students a time structure to play activities and games.</td>
</tr>
<tr>
<td>Time issue affected Mandarin learning and suggestions were made to overcome them.</td>
<td>The suggestion was made to increase the number of teachers teaching Mandarin so there would be Mandarin lessons every week.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Themes Common Across Experimental Teacher Interviews</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Embedded assessment was good.</td>
<td>No reason indicated</td>
</tr>
<tr>
<td>Feedback was good.</td>
<td>The reasons given by Years 2/3 and Year 4 are so different that they are treated separately in Table 4.4.</td>
</tr>
<tr>
<td>There were problems in the implementation of embedded assessment and suggestions were made to overcome them.</td>
<td>In order to better manage class, the teacher-researcher needed to watch untargeted students and give additional tasks to those who finished work early. To assess a small group of students was the only possible way in a small amount of time.</td>
</tr>
</tbody>
</table>
Table 4.11  Themes that were different between different age groups for teacher interviews

| Themes that were Different across Age Groups for Control and Experimental Groups |
|-----------------------------|-------------------------------------------------------------|
| **Theme**                  | **Reasons for Theme**                                       |
| Students did not enjoy learning Mandarin before. | Years 2/3 students did not enjoy learning Mandarin because they were less open to change and scared by the difficulty of Mandarin compared with Year 4 students. |
| There were not-so-positive learning outcomes. | Learning outcomes were not as positive for Years 2/3 students because Mandarin itself was hard to learn and students were still at elementary level compared with Year 4 students. |

**Themes that were Different between Age Groups for Experimental Teacher Interviews**

<table>
<thead>
<tr>
<th><strong>Theme</strong></th>
<th><strong>Reasons for Theme</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Feedback was good.</td>
<td>The Years 2/3 class teacher thought feedback was good because it appreciated students’ effort, was instant, kept momentum going, and motivated students to learn more. The Year 4 class teacher thought feedback was good because it was understood by students, and promoted learning.</td>
</tr>
<tr>
<td>Embedded assessment was conducted in a positive environment for Year 4 students.</td>
<td>No reason indicated.</td>
</tr>
</tbody>
</table>

There was a strong consensus among the four teachers, that students enjoyed learning Mandarin. Mrs W said: “I think generally the response in my class has been quite positive. I think they enjoy them” (28/06/2010). Mrs M said: “They always enjoy it. They looked forward to it and most of the class seemed to have their hands up all the time” (28/06/2010). To illustrate that students enjoyed learning Mandarin, Mrs W gave an example of a student who went from being very negative about learning Mandarin to enjoying the subject and completing all the work assigned: “He is more receptive to Mandarin now. He certainly interacts more; he puts his hand up lately to give answers, that sort of thing. He’s been finishing his work” (28/06/2010).

The teacher participants thought that the Mandarin learning was effective in terms of the short lesson time. Mrs H’s response summarised the points made by her colleagues:
I think for the time that you’ve been here, it’s very effective. I think the lessons are very good. But you’re getting, you know, the children are becoming quite conversant with the vocabulary that you taught them in that small amount of time with those little windows of opportunities. So, I think they are doing really well (24/06/2010).

The teachers offered reasons for the effective learning. One reason was the visual and auditory support that the teacher-researcher provided during lessons. The teachers agreed with combining the use of visual and auditory support. For example, Mrs M said:

You’ve got the visual and the auditory so it’s combining. I mean children like that one. He can see the picture up there. He can see the word and he’s heard it. And he can associate it with the picture (28/06/2010).

Some teachers went beyond the explanation and pointed out that by combining different types of support it was “catering for all aspects of learning, the way people learn” (Mrs W, 28/06/2010).

Repetition was another reason cited for effective learning. Mrs K repeatedly said during the interview that Mandarin learning was effective because “you do go over and over (it) and from lesson to lesson you do revise the vocabulary” (28/06/2010).

All the teacher participants recognised the use of activities and games in engagement and motivation. For example, Mrs M said that the teacher-researcher had “come up with some really engaging, motivational things” (28/06/2010). Therefore, “Most children seem to enjoy participating in the activities” (Mrs T, 28/06/2010).

It is interesting that only one teacher mentioned fun when they offered reasons why the activities and games engaged and motivated students. Mrs M said: “I think your activities have been very engaging and that is just so important. They (students) are not turned off by them. They want to play them. I think they’re fun” (28/06/2010).
is possible that the teachers took ‘fun’ for granted since it was the nature of activities and games.

There was a strong consensus among the teachers that the variety of activities and games students experienced contributed to engagement and motivation. The simple changing of activities and games interested students. For example, Mrs H commented: “A variety of activities is good, because it keeps children’s interest. I think it’s a benefit” (24/06/2010). The wide variety of activities and games made such a deep impression on the teachers that they mentioned many times through their interviews that the teacher-researcher tried “different activities just to maintain their (students’) interest” (Mrs T, 28/06/2010).

The majority of the teacher participants believed that group work interested students and encouraged them to participate in the activities and games. Mrs W said:

Group work is really important with the children. I liked the way that you have tried some of those group work activities. I think that one went really well because the children were more motivated to speak to each other about what they were doing (28/06/2010).

Some teachers suggested that ‘relatedness’ interested students. Students were attracted to things that were closely related to them. For example, when talking about the connection between students’ own cultures and their learning, Mrs W commented: “It’s relating Mandarin to their own cultures as well, like the quiz I think. It also brought their knowledge of what their culture is like a little bit. They were able to transfer it into Mandarin” (28/06/2010). Mrs T thought it was good and meaningful to relate activities and games to students’ daily life so students would be more engaged: “you have lots of children volunteering that haven’t volunteered before. So, I think with the lessons, the more they relate to their everyday life, they engage more in it” (28/06/2010). It seems that students were engaged and motivated by the closeness between the activities and themselves.

Mrs M mentioned the role of hands-on activities in capturing student interest: “They're (activities and games) all practical things that children are interested in”
Mrs W recognised that a ‘sense of success’ engaged students who were less confident in learning Mandarin:

But there’s always reluctance. The ones (students) that are quiet or those who think Mandarin is too hard – you’ve tried to engage them with simple labelling or colouring – those sorts of things. So they’re feeling successful in some of those areas (28/06/2010).

A sense of success helped students build their confidence in Mandarin and therefore they became more engaged.

All teachers believed that activities and games were vehicles for students to learn Mandarin and achieve a ‘sense of success’. Mrs T summed up the points made by her colleagues:

Obviously the activities are serving their purpose of teaching them the vocabulary. I’m just amazed. The children have picked it up because I sit here and listen and I’m completely bamboozled by it. But, they understand it and remember it – but not me (28/06/2010).

The teachers discussed the reasons that promoted student learning. They all agreed that the use of activities and games, as the main teaching strategy, contributed greatly to students being able to use the target language. However, they also said repetition was important in promoting student learning. Mrs T said: “The activities gave them plenty of practice to use the vocabulary” (28/06/2010). Through practice, students were able to master what they had to learn. Mrs T went on to say: “There’s lots of repetitiveness in the activities so they learnt the vocabulary” (28/06/2010). Mrs H explained why students needed repetition: “Because I think that’s the only thing, is that some children will retain it and hold it in their brains but other kids they just need the repetition” (24/06/2010). The constant repetition helped reinforce the words and sentences so that students were able to retain them.

The teachers also commented on the teacher-researcher’s teaching. They were all impressed by the variety of strategies employed. For example, Mrs W said: “I would like to say overall that I’m impressed that you’re trying to use different strategies and
seeing which things work” (28/06/2010). Mrs H gave a more detailed explanation: “You had a good balance of smart board, things on the mat and going to the desks to do little activities. That’s been good” (24/06/2010). When it came to the smart board, the teachers reaffirmed their view that this technology provided excellent visual support as well as providing the basis for combining visual and auditory support. Mrs M said:

What stands out for me is all the visuals that you’ve done. But just overall, I just enjoy every time you do it. You know – just the great visuals and how well you use the smart board. I’m very impressed because I’m not that good at smart board (28/06/2010).

Mrs M commented on the creation of a comfortable and supportive learning environment in promoting student learning:

I think you offer so much support that every child, like you know the one child I have in there, he is ‘IM’ so his intellect isn’t like the others, and yet, he has a go and he feels safe enough to have a go. So, I think because of the different ways that you presented and different opportunities, but they feel secure in having a go – very safe and supportive (28/06/2010).

It seemed that the safe learning environment created during lessons provided students with a sense of security. Consequently, they felt confident that they could attempt the work even when they found it challenging.

Overall, good preparation, presentation, transition strategies, revision, repetition and relatedness contributed to promoting Mandarin learning.

Despite the effective use of activities and games and sound teaching practice, the teachers provided suggestions to help the teacher-researcher improve her teaching. Mrs T suggested that she collect worksheets at the end of the class so that students knew they were completing their work for a purpose.

Some teachers were concerned about the balance between whole-class ‘drill’ and individual work. Mrs H suggested the teacher-researcher choose “three or four
(students) to have their individual turn and then get them all to, maybe, look at each other and have a turn en masse” so that the teacher-researcher “could get over that a little bit quicker” (24/06/2010). Mrs W agreed that “individual turns should not go too long otherwise students would lose concentration” (28/06/2010).

Mrs W also suggested that students be given a time structure for activities and games. She said this would help them learn to become more organised. She said:

And when you do, do that, giving them a time structure, you know, you can tell them: you’ve got this amount of time or whatever, this is what I’m expecting you to be able to say or do. So, they’re very structured, they know what they have to be achieving in that time (28/06/2010).

The teachers provided pedagogical suggestions because they understood the teacher-researcher was a novice or beginning teacher. Mrs W was confident that the teacher-researcher would improve her classroom teaching because: “that’ll just come with experience, I think” (28/06/2010).

All the teachers voiced their concern about lack of lesson time and hoped that there would be more time allocated to Mandarin learning. Mrs H voiced the strongest concern:

I think it was better when we had it weekly. I think once a fortnight you tend to lose the momentum. Of having something every week, I think its better. But I mean that’s the problem having to share you around with the whole school. I can’t really see how we overcome that unless we had half the time and then that might be less effective than if you’re doing it every fortnight. That’s the only problem I have. I think fortnightly is not enough! (24/06/2010)

For Mrs M, lack of time for Mandarin also influenced the use of feedback to improve learning. She thought that she might need “to bring them back a little bit more and go over it with them in the afternoon” (28/06/2010). It is clear that the teachers believed that the lack of time affected student Mandarin learning.
The two teachers of the experimental groups thought embedded assessment was good and “very valuable” (Mrs H, 24/06/2010). They also recognised the role of feedback and its importance as the ‘core’ of embedded assessment, in student learning. Mrs M said: “Feedback is really, really important, especially with a language. And they need that immediate feedback from you. And I think that’s a big strength of how you’re teaching it” (28/06/2010).

The teachers discussed the reasons why feedback was so important. Each teacher gave specific reasons. For Mrs H, the Years 2/3 class teacher, feedback enabled students to interact with the teacher-researcher and see that their efforts were recognised. For example, Mrs H said:

I think it’s very valuable because kids like to know that they had a try and you appreciate what they’ve done. So, I think that is very important that – instant feedback. In fact, sometimes I find that ‘on-the-spot assessment’ that you’re doing is intellectually better than giving them an actual test because you’re sort of having that one-to-one moment with that child. I think they feel really good about the words (24/06/2010).

When students realised their efforts were noticed through their interaction with the teacher-researcher, they were stimulated to try harder and possibly learn more. Students wanted to learn for their own sake as well as to try and please the teacher-researcher. Mrs H commented:

I just find whenever you do, having something where you just check with the children, know it or not, you give them the instant feedback. I think it feeds the children to want to know more than, rather than, sort of being on the proof reading, not getting any of that instant tiniest recognition . . . It makes the kids then want to do well for you if they know that you’re noticing their attempts (24/06/2010).

Mrs H really thought instant feedback was very effective, and gave a contrasting example to illustrate her point:

If you just give them a paper test and you’ve collected it all up, they don’t get it back again until you’ve marked it and by then, as you
know, kids just sort of one minute wonders. They do forget about it.
So, by the time they get it back, they’re not interested. By getting that
momentum going and sort of getting that feedback instantly, I think,
it is important (24/06/2010).

In contrast to paper tests, which are not marked and returned to students for some
time, embedded assessment and specifically timely feedback are able to maintain
student interest and learning momentum. Students view assessment as part of the
lesson. It becomes part of teaching and learning. It is not viewed as something else –
something that is not actually part of learning. Essentially, Mrs H thought that
feedback benefited Years 2/3 students because it engaged and motivated them.

Mrs M, the Year 4 class teacher, valued feedback from a different and more
academic perspective. Mrs M thought Year 4 students understood that feedback
provided information to help them learn: “They know once they’ve had it. Like, the
one-to-one with you, they know then what they have to do. I think that’s great”
(28/06/2010). When asked whether feedback promoted learning, Mrs M gave a
definite positive response, based on her observations of student achievements; she
said, “Of course” (28/06/2010).

However, both teachers of the experimental groups noted problems with the
implementation of embedded assessment. The teachers expressed their concern that it
was impossible for the teacher-researcher to assess all students in the small amount
of time that was available. They suggested targeting a small group of students each
lesson:

But I do think again, you’re stretched to do 26 children in a small
amount of time. So, I don’t know whether you can focus in your mind
so well, ‘Today I’m going to try and focus on the Year 2 girls and
next time focus on the year 2 boys’ I noticed you sort of pinpointing
once. I thought you might be doing that. I think that’s the only way
you can do it (Mrs H, 24/06/2010).

Mrs M made some suggestions about classroom management. She pointed out that
the teacher-researcher should continue to monitor untargeted students while
assessing: “While you’re with one group, you just got to sort of, I guess, build up
your skills watching all of them” (28/06/2010). When invited to provide suggestions about how to control the whole class while assessing a particular group, Mrs M said the teacher-researcher could provide additional activities that make it easier to ‘keep an eye’ on untargeted students:

Probably, they probably just need something else as well as, like to go on with. Sometimes the activities might finish too soon for them. And they finish and they, you know, they’re not on tasks. So maybe you just need an extra activity for the group that you’re not targeting . . . If I wasn’t in the room, it would be harder for you to be with that group. Like it could be any teacher and still be monitoring the others and making sure their noise level is not too high (28/06/2010).

Although students enjoyed learning Mandarin throughout the study, they did not like it before the study started. Mrs W, a Years 2/3 class teacher, commented on a student’s change from not enjoying Mandarin to becoming engaged, after the study commenced. The reason she thought the student did not initially like Mandarin was because the student “thought it (Mandarin) was too hard for him” (28/06/2010). He “was very closed-minded about it. He just didn’t like it at all. The activities made it easier” (28/06/2010).

The difficulties associated with language learning for young students resulted in Years 2/3 students not achieving some of the learning outcomes expected. Mrs W explained that the trouble students had with learning sentences was because: “It’s so different from our language, so just getting in tune with it isn’t easy, especially for a whole sentence” (28/06/2010). The differences between pronunciations of Mandarin compared with those of English caused Year 2/3 students problems. The fact that “they’re doing it at very elementary sort of level” was the reason why some Years 2/3 students were unable to apply what they had learnt in the activities and games (28/06/2010). It seemed that students at this stage of their development did not have sufficient skills to apply existing knowledge to a different context. Years 2/3 students were relatively dependent and immature learners compared with Year 4 students.

Mrs M commented that assessment was conducted in a positive environment. Assessment was embedded in the activities and games as part of normal lessons. The
atmosphere associated with assessment was not threatening for students and this facilitated their becoming more confident in learning. Mrs M said:

I think they don’t, you know, from my point of view, they don’t seem to be intimidated by you or feel that they’re being tested, I think. You do it so calmly that I think it’s just part of the lesson and it is just very smooth for them. There’s no anxiety like, I mean . . . I remember, you know, learning any language can be ‘OK, I don’t know what that is’ and then you get a mental block and you wipe out what you know. So, I think it’s important for them at this stage to be comfortable (28/06/2010).

In summary, the teachers found students enjoyed learning Mandarin and learning was effective. They offered detailed suggestions about how activities and games engaged students and promoted learning. The teachers commented on how good teaching facilitated the effectiveness of Mandarin learning and made suggestions to improve pedagogy. Time limitations were a significant issue for the teachers. The two teachers who taught the experimental groups thought embedded assessment and feedback were good and provided reasons why feedback was good. The teachers pointed out problems with the implementation of embedded assessment, and made some suggestions to overcome them.

Compared with Year 4 students, some Years 2/3 students found learning Mandarin difficult and did not achieve some of the expected learning outcomes. The reasons given to explain why feedback during embedded assessment was effective, were different for the Years 2/3 teacher compared with the Year 4 teacher. The Years 2/3 teacher valued feedback because it engaged and motivated students, while the Year 4 teacher valued the feedback process because it taught students how to use information about their learning and take some responsibility for bridging the gap between their view of their learning and that of the teacher. For Year 4 students, embedded assessment was conducted in a safe and supportive environment.
4.5 Teacher feedback sheets

Teacher feedback sheets were an alternative way for class teachers to provide feedback and suggestions after the teacher-researcher taught lessons. This was a necessary practical way of receiving feedback, given the very busy daily schedule of teachers and the teacher-researcher. It was a more reliable way of obtaining feedback than trying to organise a time to talk face-to-face. The idea of the teacher feedback sheet emerged about halfway through the study, and was suggested because attempts to meet regularly had not worked out. Consequently, there were 12 feedback sheets to be analysed, rather than 26. The teachers from both control and experimental groups provided feedback on the Mandarin lessons and the activities and games used in the lessons. The teachers from the experimental groups also commented on embedded assessment.

Since the teachers provided information and indicated their views during the teacher interviews, it was expected that there would not be a great deal of new information to be extracted from the teacher feedback sheets. Consequently, the unit of analysis for the teacher feedback sheets was ‘ideas’ rather than sentences. The data analysis of the teacher feedback sheets would serve to triangulate or confirm the findings from the teacher interviews. Table 4.12 shows the themes that emerged from the teacher feedback sheets that were in common for all teachers, as well as the themes about embedded assessment that were in common for teachers of the experimental groups. Table 4.13 presents the differences between the different age groups.
Table 4.12  Themes that were in common across teacher feedback sheets

<table>
<thead>
<tr>
<th>Theme</th>
<th>Reasons for Theme</th>
</tr>
</thead>
<tbody>
<tr>
<td>Activities and games engaged and motivated students.</td>
<td>Activities and games engaged and motivated students because they were hands-on, creative, varied, related to students, and provided visual support.</td>
</tr>
<tr>
<td>Activities and games promoted student learning.</td>
<td>Activities and games promoted learning because students used Mandarin; they provided repetition; they promoted group work; they used worksheets; they supported students with visual and auditory aids; and they allowed students to use their existing knowledge and skills.</td>
</tr>
<tr>
<td>There were suggestions to improve pedagogy.</td>
<td>In order to gain control on activities and games, the teacher-researcher needed to give clear instructions; provide students with support; set a time structure; make sure all students were engaged, and forbid students to call out.</td>
</tr>
</tbody>
</table>

Themes in Common Across Experimental Teacher Feedback Sheets

<table>
<thead>
<tr>
<th>Theme</th>
<th>Reasons for Theme</th>
</tr>
</thead>
<tbody>
<tr>
<td>Embedded assessment promoted learning.</td>
<td>The reasons given by Years 2/3 and Year 4 are so different that they are treated separately, in Table 4.6.</td>
</tr>
<tr>
<td>There were problems in the implementation of embedded assessment and suggestions were made to overcome them.</td>
<td>In order to better manage the class, the teacher-researcher needed to watch untargeted students and give additional tasks to those who finished work early.</td>
</tr>
</tbody>
</table>

Table 4.13  Themes that were different between different age groups for teacher feedback sheets

<table>
<thead>
<tr>
<th>Theme</th>
<th>Reasons for Theme</th>
</tr>
</thead>
<tbody>
<tr>
<td>Embedded assessment promoted learning.</td>
<td>The Years 2/3 class teacher thought embedded assessment promoted learning because students felt good about feedback and were motivated by feedback to learn more. The Year 4 class teacher believed that embedded assessment promoted learning because it included learning discussions between students and the teacher and students improved their learning as a result.</td>
</tr>
<tr>
<td>Embedded assessment provided students with opportunities to show what they knew.</td>
<td>No reason indicated.</td>
</tr>
</tbody>
</table>
The themes identified from the analysis of the teacher feedback sheets were consistent with the findings from the teacher interviews. Based on their observations of each Mandarin lesson, the teachers confirmed that the activities and games engaged students and enhanced their learning of Mandarin. The reasons they gave in the feedback sheets were the same as those stated in the interviews.

Most of the children were engaged – some more so than others. They were all engaged in the drawing activity . . . You gave the children plenty of opportunity to practise Mandarin, both as a group and individually. The repetition was excellent (Mrs T, 04/05/2010).

The teachers provided greater detail and suggestions for pedagogical improvement. They said student engagement should be checked constantly. “Try to observe those children who never volunteer to answer or who are not paying attention. Try to draw them into the lesson” (Mrs T, 01/06/2010).

They said that a reasonable amount of time should be allocated for activities and games, that instruction should be clearer, that support should be provided if necessary, and that under no circumstances should students ‘call out’. “Introduce the rules or expectations very clearly. As you become more familiar with the students, you can help with the less imaginative students or the ones who need additional help” (Mrs W, 11/05/2010).

The teachers of the experimental classes agreed that embedded assessment promoted learning. However, agreement was for different reasons. Years 2/3 students felt good about feedback and hence were motivated to learn. “The immediate feedback is great as it encourages the children to become more confident in themselves when attempting a new language” (Mrs H, 11/05/2010).

Year 4 students improved because of the discussions they had with the teacher-researcher about their learning. Mrs M said: “Yes, because of the opportunities provided for practising Mandarin and the quality of the children’s responses” (04/05/2010).
The teachers were concerned about classroom management during the implementation of embedded assessment and consequently provided suggestions for improvement.

Try and monitor all the class while you are working with individual students – don’t worry, it just comes with practice. When they finished the menu, they needed to do something else – maybe illustrate or create another – just because there are always those who finish quickly and need something else to keep them on task (Mrs M, 01/06/2010).

The Year 4 teacher for the experimental class commented that students had opportunities to show what they knew throughout the embedded assessment process. In response to whether the embedded assessment in the role play activity promoted student learning, Mrs M gave a definite “Of course” and explained: “They all had the opportunity to show what they knew” (15/06/2010).

In summary, the data from teacher feedback sheets were similar to and confirmed the findings from the teacher interviews. However, the feedback sheets provided more detail. The teachers gave more specific suggestions on how to improve pedagogy, such as forbidding calling out and providing more support. The Year 4 teacher for the experimental class said embedded assessment opened windows for students to show what they knew.

4.6 Reflective journal

The reflective journal consisted of the teacher-researcher’s observations of students, on lesson feedback from students and teachers, and the teacher-researcher’s own thoughts, feelings and reflections. It was a melting pot for thinking about the study, teaching, student learning and theory. It was informed by all of the above, as well as anything else that might be relevant to the study. The main function of the reflective journal, as far as the study is concerned, was to inform the preparation and delivery of the next lesson in the action research iterations. Overall, there were 13 sections in the journal, one for each lesson taught. Each section was analysed idea by idea for emerging theme-focuses, in a similar way as the teacher feedback sheets were analysed. The ideas were summarised and categorised to identify theme-focuses.
Since this study explores activities and games and embedded assessment, all the summaries were categorised according to their connection with either activities/games or embedded assessment. However, if categories other than activities/games or embedded assessment did emerge they were retained, so that data would not be lost. Figure 4.20 shows the analysis for Section 8 (Week 8) of the reflective journal, when Years 2/3 were being taught.

<table>
<thead>
<tr>
<th>Week 8 Years 2/3</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Activities/Games</strong></td>
</tr>
<tr>
<td><strong>Summary</strong></td>
</tr>
<tr>
<td>Students were engaged in the activity.</td>
</tr>
<tr>
<td>The activity enabled students to use their creativity.</td>
</tr>
<tr>
<td>The activity was relevant to students.</td>
</tr>
<tr>
<td>The worksheet as part of the activity helped students practise and remember the language.</td>
</tr>
<tr>
<td>The activity provided opportunities to hear students speaking Mandarin individually.</td>
</tr>
</tbody>
</table>

Figure 4.20  Theme-focuses for Week 8 of the reflective journal

After analysing the reflective journal for all 13 weeks in the same way as described above, all the theme-focuses were combined, to produce the themes as shown in Table 4.14.
### Table 4.14  Reflective journal themes

<table>
<thead>
<tr>
<th>Theme</th>
<th>Reasons for Theme</th>
</tr>
</thead>
<tbody>
<tr>
<td>Activities and games engaged students.</td>
<td>Students were engaged because the activities and games were hands-on, creative, competitive and related to students.</td>
</tr>
<tr>
<td>Activities and games promoted student learning.</td>
<td>Student learning was promoted because the activities and games helped students use the language; they expanded their learning; they reinforced learning; they provided worksheets to help students practise and remember.</td>
</tr>
<tr>
<td>Group work caused problems.</td>
<td>Group work caused problems because over-competitiveness led to blaming peers; students did not like to share; there was incompatibility among group members; and some students did not have a turn.</td>
</tr>
<tr>
<td>Beginning teacher unfamiliarity with students and lack of experience and skills detracted from the effectiveness of teaching and learning Mandarin.</td>
<td>The teacher-researcher forgot to assess; gave feedback before students finished their work; was not able to assess in a flexible way; and was not familiar with student learning levels.</td>
</tr>
<tr>
<td>Suggestions were made to improve pedagogy.</td>
<td>Students needed clear instructions for activities and games.</td>
</tr>
<tr>
<td>Embedded assessment indicated how well students were learning.</td>
<td>No reason indicated</td>
</tr>
<tr>
<td>Feedback promoted student learning.</td>
<td>No reason indicated</td>
</tr>
<tr>
<td>Embedded assessment enabled the teacher-researcher to adapt her teaching.</td>
<td>No reason indicated</td>
</tr>
<tr>
<td>Students liked embedded assessment.</td>
<td>Students liked embedded assessment because they were able to demonstrate how well they were learning.</td>
</tr>
<tr>
<td>There were some problems in the implementation of embedded assessment and suggestions were made to overcome them.</td>
<td>The teacher-researcher needed to watch untargeted students, in order to manage classes better. Assessment needed to reflect students’ genuine learning state.</td>
</tr>
</tbody>
</table>

Although it was expected that the themes that emerged from the reflective journal analysis would act to triangulate the findings from the teacher interviews, they provided more detailed and specific information about the pedagogy and classroom management associated with activities and games, as well as embedded assessment.
In addition, the themes that emerged confirmed that activities and games engaged and motivated students, and promoted student learning. The following extract describes how a quiz engaged students and promoted their learning:

Students concentrated on the game. Although it was not their turn students listened to the questions and tried to answer. I had to ask students to be quiet and not leak the right answer . . . All the answers were given in Mandarin. Even in the discussion, the names of the countries were spoken in Mandarin . . . Students understood each word. Only when students gained a clear understanding of each word could they speak out the right answer . . . The game triggered the students’ interest in other countries. Students were keen on knowing foreign countries. They enjoyed sharing their knowledge of foreign countries (09/03/2010).

It was found that group work, although it was useful, was not easy to implement and manage. When students competed as a group, the competitiveness within groups led to peers blaming each other when their group did not perform as expected. Students did not like sharing learning materials with their partners and there was incompatibility between group members. Some students lost their turn in practising the language, and this decreased the potential for their learning.

The tension among students, as a consequence of over-competitiveness, is illustrated by the following:

Students wanted to win so badly that some students blamed their team mates for passing words slowly. One girl who was the last person in her team had a quarrel with her team mates and cried . . . Students become over-competitive. Peer blaming was unexpected. Two students cried in the lessons, which had I had never seen before. I had under-rated student competitiveness (02/03/2010).

The extract below illustrated just how much students did not like sharing learning materials:

When students used the game to review the words, the same problem occurred. Students did not like to share. Elvis was very unhappy, telling me that ‘They didn’t let me have the menu’. At last, he became
very angry, saying ‘Just give it to me. Give it to me’. I told students to share with group members and made this one of the goals of the lesson (16/03/2010).

The teacher-researcher, as a beginning teacher, lacked experience and skills in teaching and assessment. Her unfamiliarity with students in general also caused difficulties in implementing assessment processes. At times, she forgot to assess students or gave feedback too early. Lack of experience meant that flexibility, as a skill, was not well developed when a lesson went differently to what was expected. The extract below shows the inability of the teacher-researcher, as a beginning teacher, to select the appropriate time to provide feedback:

I should give students feedback when they finish their answers. Instead I gave feedback as soon as they made mistakes regardless of whether they were finished or not. I needed to respect student thinking more and be patient. They may have changed their answers (09/03/2010).

Inexperience and unfamiliarity with student mastery of other subject areas also caused difficulties when designing appropriate activities and games:

I had no idea what students knew about these countries and how well they knew them. I had difficulty in categorising the questions, which caused students to challenge the difficulty of questions and complain about fair play (09/03/2010).

The findings also indicated that the teacher-researcher needed to provide clear instructions to students so that they knew exactly what to do and how to do it. The extract below shows that failure to give clear instructions made activities and games less effective than they should have been:

Some students did not understand what to write on the line. I had to go over the instructions again for them. This time it was my mistake. I put some clues on the worksheet but did not tell them how to use them. These clues were counter-productive. The students were confused by them. Next time, I need to put more effort into making instructions very clear (25/05/2010).
The findings showed that embedded assessment and its associated feedback helped both students and the teacher-researcher know how well students were coping with the work and the learning. Sometimes, embedded assessment and feedback revealed unexpected performances from students:

In the assessment, I found, with great surprise, that the words which I had assumed difficult were easy for the students. Students pronounced Japan and New Zealand almost perfectly. They not only got the syllables right but also the tones. However, for the supposed ‘easy words’, like Australia, China, France, U.S.A. and U.K, students always had difficulty with the tones. I corrected the mistakes every time but students continued to make the same mistakes over and over again (09/03/2010).

Students reacted to feedback positively to improve their learning. Assessment feedback communication provided an ideal time for some students to practise their Mandarin:

When I asked Elvis to talk about the face to me, he used English all the time. I had to ask him to tell me in Mandarin. He told me directly that he did not know how to say the words. I pointed out the clues on the sheet and said the words first and then asked him to repeat them. He did so. Actually, he said the Mandarin words well (25/05/2010).

Students liked the embedded assessment process because they enjoyed showing the teacher what they had learnt: “Emily was close to us and heard me ask a difficult question and she said, ‘I know, I know’. She then spoke the two phrases in Mandarin almost perfectly” (08/06/2010).

The teacher-researcher changed her teaching in response to student feedback during the embedded assessment interactions:

The game and activity and assessment feedback helped me realise that some content was too difficult. Therefore, I adjusted the original teaching plan. For example, I learnt from the menu game that it was hard for Years 2/3 students to learn one question and one answer in a single lesson. That’s why, when learning nationality, Years 2/3 students did not learn the exact content taught to Year 4 students.
They only learnt simple statement sentences about their own nationality (11/05/2010).

The findings showed there were problems with the implementation of embedded assessment and as a result of feedback from teachers and students changes were made to overcome these problems. One problem was that student learning was not able to be accurately assessed when one student overheard the assessment of previous students. Consequently, it was decided, upon reflection, to assess each student independently and ‘out-of-earshot’ of other students:

When I asked students what they heard from the last student and what they said to the next student in the game, they always repeated what they heard just then, rather than recalled what they actually said in the game. Consequently, I thought assessment should be conducted individually. This means that students should not be able to hear what others say when they are being assessed. Otherwise, the feedback they receive would not genuinely reflect what they had learnt (02/03/2010).

In general, the findings from the analysis of the reflective journal confirmed the other qualitative findings. This is not surprising, since they were derived from an analysis of data synthesised from previously analysed data sources. They were also findings that reflected the interpretations and underlying views of the teacher-researcher. This meant they reflected issues that were important to the teacher-researcher. Consequently, new themes emerged that had not emerged from previous analyses. Problems with implementing group work, beginning teacher inexperience and unfamiliarity with students and problems associated with designing activities and games, as well as problems with implementing student assessment emerged. I also found that the teacher-researcher was informed by teacher and student feedback as well as her own reflections and, as a result, was able to adjust her teaching to reduce the impact of the issues identified.

4.7 Themes from the qualitative data

All the themes that were identified from different qualitative data sources were reviewed. to summarise the qualitative research findings. Some themes were
collapsed into each other, while others were broken down in terms of their connections with other themes. Some themes were discarded because the data itself indicated they were peripheral to or even remote from the research questions this study was attempting to answer. Examples that demonstrate how themes were discarded are provided in the discussion after Table 4.15. The final list of themes is shown in Table 4.15.

Table 4.15  Summary of themes that emerged from all qualitative data sources

<table>
<thead>
<tr>
<th>Themes from all qualitative data sources</th>
<th>Reasons for Theme</th>
</tr>
</thead>
<tbody>
<tr>
<td>Activities and games engaged and motivated students.</td>
<td>Students were engaged because the activities and games were fun, varied, hands-on, creative, competitive, aroused students’ curiosity, were related to students, involved autonomy, provided visual and auditory support, and created opportunities for students to experience success.</td>
</tr>
<tr>
<td>Activities and games promoted student learning.</td>
<td>Student learning was promoted because the activities and games helped students use the language; they expanded their learning; they promoted learning autonomy and they involved repetition, which reinforced learning. They involved group work and built on existing student knowledge.</td>
</tr>
<tr>
<td>Group work caused problems.</td>
<td>Group work caused problems because over-competitiveness led to students blaming peers; students did not like to share; there was some incompatibility among group members; and some students did not have a turn.</td>
</tr>
<tr>
<td>There were suggestions to improve pedagogy.</td>
<td>Suggestions include balancing whole class drill and individual turns, making activities and games more challenging, setting reasonable time limit on activities and games, making sure all students engaged, giving clear instructions, distributing materials without losing focus, collecting worksheets purposefully, providing more teacher support, and forbidding calling out.</td>
</tr>
<tr>
<td>Students had positive feelings towards being assessed.</td>
<td>No reasons indicated.</td>
</tr>
<tr>
<td>Providing feedback was good.</td>
<td>Providing feedback was good because it helped students know what they had learnt and what still had to be learnt; it was instant; it enabled the teacher to adapt/change teaching; and it promoted learning. Years 2/3 students appreciated the effort from the teacher in providing feedback. This motivated student learning.</td>
</tr>
</tbody>
</table>
Feedback promoted student learning. | Student learning was promoted because feedback stimulated student thinking and helped students develop an understanding of what they were to learn and remember. Students improved their learning in response to feedback.

Some students were not used to formative assessment. | Some Years 2/3 students did not feel they were being assessed. Some Year 4 students complained about not receiving an assessment result or score as part of their assessment feedback and did not know how to improve their learning from the assessment feedback provided.

There were some problems in the implementation of embedded assessment and suggestions were made to overcome them. | In order to better manage the class, the teacher-researcher needed to watch untargeted students and give additional tasks to those who finished work early. To assess a small group of students was the only possible way in a small amount of time. Assessment needed to reflect students’ genuine learning state.

Time issues affected Mandarin learning and there were suggestions made to overcome them. | The suggestion made was to increase the number of teachers teaching Mandarin so there would be Mandarin lessons every week.

Beginning teacher unfamiliarity with students and lack of experience and skills detracted from the effectiveness of teaching and learning Mandarin. | The teacher-researcher forgot to assess; gave feedback before students finished their work; was not able to assess in a flexible way; and was not familiar with student learning levels.

| The final themes reflected the scope and content of all the qualitative data. A theme should be identified if “it captures something important in relation to the overall research question” (Braun & Clarke, 2006, p. 82). Themes that did not capture how activities and games and embedded assessment promoted student learning of Mandarin were discarded. For example, the theme-focus ‘Students valued learning a new language’, generated by the analysis of student interviews, was discarded as a theme. This theme indicated that students valued Mandarin because they thought they might use it in the future if they travelled overseas. However, it did not capture any important information about the use of activities and games and embedded assessment to promote Mandarin learning. Therefore, it did not fit in the main themes and thus was discarded. At times, similar theme-focuses from different data sources were collapsed into each other to form one theme. For example, the theme-focus ‘Students felt positive about assessment’ identified by the analysis of student interviews, and the theme-focus ‘Embedded assessment was conducted in a positive environment for Year 4 students’ generated by the analysis of teacher interviews, were essentially talking about the same idea: students felt positive about embedded |
assessment practices. The two theme-focuses were different facets of one theme. Therefore, these two theme-focuses were blended into one theme: students had positive feelings towards being assessed.

Figure 4.21 shows a summary of the overall themes as a thematic map. The ovals indicate the major areas the study explored. The rectangular boxes show the themes that emerged. Activities and games were viewed positively because they engaged and motivated students and promoted learning. Group work associated with activities and games was viewed negatively, as was some of the pedagogy used to implement them. The findings suggest that some of the reasons for this are the inexperience of the teacher-researcher as a beginning teacher and the lack of time allocated to Mandarin lessons.

Embedded assessment was also viewed positively because the feedback it provided helped students learn. Despite these benefits, the fact that students were not used to formative assessment processes meant that there were problems with implementation. Again, the findings indicate that the inexperience of the teacher-researcher as a beginning teacher, and the lack of time allocated to studying Mandarin, directly affected the effectiveness of embedded assessment in promoting Mandarin learning.
Figure 4.21 Thematic map showing the connections between themes

In summary, the qualitative data showed that activities and games were effective in engaging and motivating students, for diverse reasons. The fun component of activities and games increased student attention. The variety of activities and games appealed to students and engagement resulted from their hands-on nature. Students liked learning by doing. They were engaged by the physical acts of drawing, writing, and moving around the classroom. The relevance of activities and games to student experiences also ‘grabbed’ their interest. Students were interested in things they could readily relate to their previous ‘daily-life’ experiences, their own identity and their own knowledge. Group work attracted attention because students liked to work with their friends. The visual and auditory support offered by activities and games also engaged students. The nature of the activities and games selected to teach Mandarin enabled students to use their creativity, make their own ‘stuff’ and taste success at their individual level of understanding.

Activities and games promoted student learning because they enabled students to practise, understand, and reinforce the language they were studying. The activities
and games provided constant repetition, while group work created opportunities for students to discuss how they could use the language as well as offer each other help when needed. Writing and using worksheets allowed students to be actively involved in learning, and this reinforced their language learning. The activities and games provided visual and auditory support, expanded student knowledge and presented opportunities for autonomous learning. Consequently, the use of activities and games promoted student learning in a variety of ways.

Despite the positive role group work played in engaging students and promoting learning, it also caused some problems. Students liked to compete, to the point where their competitiveness caused them to blame their peers when their group did not perform as well as expected. Students did not like sharing learning materials. They adopted an ‘all-or-nothing’ attitude and there was not time during lessons to teach the benefits and responsibilities of sharing. There was also the issue of incompatibility among some group members. Some students found it difficult to work with others and this added to the friction within some groups. It was also found that group work deprived some students of their individual turn when self-elected ‘representatives’ spoke all the time.

Suggestions were made to improve teaching pedagogy. It was suggested that a balance should be struck between ‘whole class drill’ and individual responses. It was also suggested that some activities and games could be more challenging, in an attempt to increase the potential for student learning, as well as to increase the opportunities for students to write and participate in mini-dialogues.

In a similar way, the suggestion was made to set reasonable time limits so that students would be more efficient when participating in activities and games. The teacher-researcher was also encouraged to make sure all students were effectively engaged throughout the whole lesson. The distribution and collection of resources was also cited as another way of improving classroom management. The suggestions were made from the perspective of experienced teachers and designed to help or mentor a beginning teacher.
Students were comfortable with being assessed. They were not concerned about their performances in assessment because they knew they could practise after the lesson if their performance was below expectation. There was no anxiety generated by or associated with assessment and feedback. This was because assessment was embedded in the activities and games in a seamless way. Students viewed it as a component of the activity or game.

Feedback, the core component of formative assessment, was welcomed by students. Feedback enabled students to know how well they were learning. Feedback was timed so that it occurred at the height of student interest. Teacher-researcher evaluations of student learning provided feedback to the teacher-researcher about her teaching, and this information was used to modify or change a lesson if required. In the case of Years 2/3 students, the assessment process, in the form of feedback, helped students feel that their efforts were recognised. Recognition of their effort motivated students to try even harder to learn Mandarin. Students felt they were being given a chance to show what they knew rather than what they didn’t know.

Feedback promoted learning because it allowed the teacher to inform students of the gap between what they had shown they knew and the level of learning required. It showed them there was a gap to be closed and how they could close it. Feedback was in the form of a ‘learning discussion’ between students and the teacher. Consequently, students were stimulated to think about how they could achieve what was required. The discussion also helped students to develop a more personal understanding of Mandarin words and sentences. Students improved their learning because the discussion was tailored to their particular circumstances.

Some students were not used to formative assessment. One Year 2/3 student said he did not receive feedback from the teacher-researcher because he did not realise the discussions about his work were feedback. One Year 4 student was concerned about not receiving a ‘score’ or mark for her work. She received feedback but that was not what she was looking for. It did not meet her expectations of assessment. She did not equate feedback with how well she was learning and consequently did not know how to use feedback to guide her learning.
There were practical problems associated with the implementation of embedded assessment. By far the greatest problem was the amount of work (assessment) the teacher-researcher had to ‘get through’ in a particular lesson. It was not possible to engage in feedback discussions and assess all students in the time available. The strategy of strategically targeting a group of students each lesson was the only way to provided effective feedback over the course of the study. One of the difficulties with this strategy was that, while assessing some students, those not being assessed were not paid enough attention. This was a consequence of beginning teacher inexperience and resulted in untargeted students becoming noisy. The teacher-researcher had simply not learnt the skill of keeping an eye on all students while working with one particular group, or providing additional activities for students who finish early.

Beginning teacher unfamiliarity with students and general lack of experience and skills undermined the effectiveness of teaching and assessment. The teacher-researcher lacked the skill to make assessment a seamless part of her teaching, although this skill did develop in time. Inexperience also meant that the flexibility more experienced teachers have when unexpected things happen in a lesson, was not available. However, perhaps the greatest problem was the overall lack of lesson time which greatly decreased the effectiveness of embedding assessment in the activities that made up lessons. Students simply did not have enough time to engage fully in the activities and games or improve their Mandarin in response to feedback. It was suggested that an additional Mandarin teacher or increased lesson time and/or frequency might be a possible solution.

4.8 **Organisation of findings in terms of the research questions**

This study was undertaken to answer a specific research question in terms of three subsidiary or contributing questions. Consequently, the research findings are organised and presented in terms of the contributing research questions (Cohen, et al., 2007). The findings from the analysis of the summative tests, student interviews, teacher interviews, reflective journal and teacher feedback sheets were collated to show their connection to each contributing research question. Findings from both the quantitative and qualitative analysis were sorted against each of the three
contributing research questions to provide a synthesis between the qualitative and quantitative findings.

Table 4.16  Research findings in terms of the three contributing research questions

<table>
<thead>
<tr>
<th>Contributing Research Question</th>
<th>Quantitative Findings</th>
<th>Qualitative Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Are activities and games effective in promoting learning of the Chinese language Mandarin?</td>
<td>• Activities and games engaged and motivated students for specified reasons. • Activities and games promoted student learning for specified reasons. • Group work caused problems for specified reasons. • Suggestions were made to improve pedagogy.</td>
<td></td>
</tr>
<tr>
<td>2. Can assessment be integrated into classroom activities and games as part of the learning process?</td>
<td>• Students felt positive about being assessed. • There were problems in the implementation of embedded assessment and suggestions were made about how to overcome them.</td>
<td></td>
</tr>
<tr>
<td>3. Is embedded assessment an effective teaching strategy for promoting student learning?</td>
<td>• Years 2/3 control students achieved test scores similar to those of the experimental group. • Year 4 control students achieved test scores similar to those of the experimental group. • Year 4 control students achieved test scores significantly higher than those of the Years 2/3 control and experimental groups.</td>
<td>• Feedback was good for specified reasons. • Feedback promoted student learning for specified reasons. • Some students were not used to formative assessment. • Beginning teacher’s unfamiliarity with students and lack of experience and skills decreased the effectiveness of teaching and learning. • Lack of time affected the effectiveness of Mandarin learning and suggestions were made to overcome them.</td>
</tr>
</tbody>
</table>

This study used quantitative data to measure and gain insights into the effectiveness of embedded assessment in promoting student Mandarin learning. Qualitative data was used to help interpret, find reasons for and understand the quantitative findings as well as provide additional findings to answer the research question and contributing questions, as shown in Table 4.16. The qualitative analysis provided
findings that can be used to answer all three contributing questions, while the findings from the quantitative analysis can be used to answer the third contributing question.

4.9 Conclusion

Chapter 4 has reported the analysis of both quantitative and qualitative data. Through thematic analysis, the qualitative data showed that activities and games were effective both in engaging students and in promoting their learning of Mandarin. Group work was found to cause some problems. Suggestions were made by teachers to help improve pedagogy. The findings indicated that students felt positive about embedding formative assessment in activities and games. However, there were also problems associated with the implementation of embedded assessment. Consequently, suggestions were made to overcome them. In contrast to the quantitative data, that showed no marked differences between control and experimental groups, the qualitative data indicated that embedded assessment promoted learning of Mandarin mainly through the use of feedback. It was found that students were not used to formative assessment. Beginning teacher lack of knowledge and experience about students, teaching and assessment reduced the effectiveness of Mandarin learning. It was shown that the short and infrequent lesson time significantly affected the effectiveness of embedded assessment in promoting student learning of Mandarin.

Chapter 5 discusses the findings in relation to the research questions. It interprets and explains the quantitative data in terms of the qualitative findings. The discussion is undertaken in the context of the existing literature, to explore student learning and assessment more fully.
Chapter 5: Findings and Discussion

5.1 Introduction

The main research question for this study was: Can assessment strategies be embedded in classroom activities and games to promote student learning of Mandarin more effectively? Essentially, the study was about positioning assessment to promote student learning. The first subsidiary research question was: Are activities and games effective in promoting the learning of Mandarin? This question was about using activities and games as learning strategies. The second subsidiary research question is: Can assessment be integrated into classroom activities and games as part of learning? This question is essentially about embedding assessment in activities and games. The third subsidiary question is: Is embedded assessment an effective teaching strategy for promoting learning? The essence of this question is about the effectiveness of embedded assessment in promoting learning. This chapter reports the key findings of the overall data analysis and discusses them in terms of the research questions. The discussion is informed by the literature, to generate theory about the relationships among embedded assessment, activities and games, as teaching strategies to promote student learning. At times evidence, in the form of quotes from the data, is used in an attempt to emphasize the robustness of the findings from the previous chapter as they are discussed in terms of the literature.

5.2 Summary of summative assessment findings

The quantitative data analysis yielded three main findings. Firstly, there was no significant difference in mean Mandarin test scores between Years 2/3 control and experimental groups, although there was a small difference in the control group compared with the experimental group. It was also found that, while mean test scores between Year 4 control and experimental groups were not significantly different, the mean test score for the Year 4 experimental group was less than that for the Year 4 control group. The third finding is that the mean test score for the Year 4 control group was significantly higher than those for the Years 2/3 control and experimental
groups. While the differences were not significant, the mean test score for the Year 4 experimental group was higher than that for the two Years 2/3 groups.

The teacher-as-researcher method of enquiry provided opportunities for the teacher-researcher to reflect on teaching practice and apply theory to improve teaching proficiency. Applications of theoretical research findings enabled the teacher-researcher to reflect on her own learning and subsequently attempt to improve student learning. There was a natural synergy between the teacher-as-researcher methodology and professional development as a beginning teacher. Views about teaching, learning and assessment were open to different ideas, as they were being reshaped by a beginning teacher. What were eventually to become the research findings were in the process of formation while views about teaching, learning and assessment were being formulated. Consequently, theoretical perspectives were willingly and strategically being investigated and transferred to the classroom context as part of the action research cycle that underpinned the teacher-as-researcher method of investigation. The purpose of teacher reflection about her own and student learning was to facilitate self-improvement as a teacher, improvement in lesson construction and classroom delivery.

5.3 Summary of interview and other qualitative findings

The findings from the qualitative data analysis revealed the positive role of activities and games in engaging and motivating students and promoting learning. There were also problems arising from group work associated with activities and games, and implementing student-centred pedagogy. The findings showed students’ positive feelings towards being assessed in the context of activities and games. Feedback was viewed positively by students because of its perceived ability to promote learning. Students were not used to formative assessment processes and the teacher-researcher was also inexperienced with this form of assessment. Consequently, there were difficulties with implementation. The findings suggest that because the teacher-researcher was a beginning teacher and lacked experience in a number of basic classroom practices this, in combination with a lack of time allocated for Mandarin
lessons, decreased the effectiveness of integrating formative assessment practices with activities and games to promote student learning.

5.4 Discussion of the summative test findings

At the outset it should be stated that as the process of providing students with feedback, as part of formative assessment, unfolded across the different classrooms, both the teacher-researcher and the supervising teachers were confident that the experimental groups were learning Mandarin more effectively than the control groups. This point is emphasised by the teacher-researcher and in teacher evidence from the reflective journal and teacher interviews:

Today, Years 2/3 students sat the summative test. I am assuming that the experimental group will out-perform the control group. This is because of the progress they seemed to make over the past few weeks. Generally, students in the experimental groups were more motivated and willing to learn. They interacted more with me. I saw more hands up in the lessons. Student pronunciations were good. They were eager to receive feedback and most of the students were able to use it to improve their learning in a variety of ways (22/06/2010).

I see it (that formative assessment promoted student learning) the following time after you have them when they got even better and they can, you know, they remember what you taught them the fortnight before (Mrs M, 28/06/2010).

It therefore came as a surprise when the findings demonstrated that the Year 4 control group performed better than the Year 4 experimental group. As the difference between group mean scores was not significant, the discussion that follows concentrates on why there were no significant differences. However, it is worthwhile making the point that, without the quantitative component of this study, some of the explanations and interpretations that follow might have been very different. The value of the quantitative analysis has been to demonstrate that teacher perceptions of learning outcomes, although usually accurate, do need to be tested at times (Cohen et al., 2007). Having made this point, it is recognised that the quantitative component was only one measure at one particular time and that there may have been contextual factors that could explain the findings. One factor could be that the assumption that both the control and experimental groups were similar in academic ability was not
valid. This and many other contextual investigations were not possible, given the timeframe for this study.

It should also be noted that lessons were taught mainly orally while the test was written. This means that during lessons listening and speaking skills were emphasised while the test required reading and writing skills. Consequently, some students may have had difficulty understanding the questions asked and responding appropriately. The nature of the tests attempted to minimise this disparity by asking students to match the sounds with the objects. However, being taught with one emphasis and being examined with another may have contributed to the unexpected results.

The qualitative findings are discussed through providing reasons for them and attempting to understand those reasons. This is pursued using the findings from the teacher and student interviews and the teacher-researcher reflections. The literature is also consulted to promote further and more in-depth understandings.

5.4.1 The role of students in formative assessment

One of the main reasons for the experimental groups not having significantly better learning outcomes than the control groups may be that students were not skilled in engaging with formative assessment. More specifically, they were not able to use feedback effectively to improve their learning. Formative assessment is most effective when students are actively involved (Black & Paul, 1998; Taras, 2002; Nicol & Macfarlane-Dick, 2006). Students need to be active in two ways. Firstly, they have to be able to perceive the gap between their present and the desired level of learning. Secondly, they have to be active in closing the perceived gap (Black & Paul, 1998). In doing so, students have to internalise teacher and peer feedback. Failure to act effectively in any of these areas compromises improved learning outcomes.

Students did not fully understand desired goals, and this hindered student learning. Students can only achieve learning goals if they understand them (Sadler, 1989; Black & Wiliam, 1998a; Nicol & Macfarlane-Dick, 2006). In the context of this
study, the desired goals were correct pronunciation of Mandarin words and sentences. Correct pronunciations require that both syllables and tones are correct. As Mandarin is a foreign language that students have not learnt systematically, some syllables, and the four tones, were unfamiliar, difficult and complex. Therefore, it was hard for students to meet the desired goals or even to understand how they were performing in terms of these goals. An example is the syllable ‘qi’, pronounced ‘chi’. This syllable can be pronounced four different ways, with four different meanings depending on the tone. Another example is the syllable ‘xiao’, pronounced ‘shiao’, with unique consonants and double vowels. This syllable can also be pronounced in different ways, with different meanings. Consequently, students only had a vague impression of the gap between their present performances and the level they were required to achieve.

Students did not know how to reach desired goals. Students were relatively passive recipients of feedback. Young children find it difficult to think quickly during feedback and to ‘zero-in-on’ a particular aspect of what they do not understand. This is particularly so when goals are both complex and very different from previous experiences. They found it difficult to modify their understandings based on feedback to improve their learning. For example, Santana, who gained a low test score, “didn’t know how to improve” (30/06/2010). Not only is it necessary for students to understand desired goals and ‘perceive’ the gap between current and desired performance, they need to take action to close the gap if they want to benefit from feedback (Sadler, 1989; Tara, 2002; Nicol & Macfarlane-Dick, 2006). How students used feedback directly affected their learning. For example, Kurt and John, who elaborated on their experiences of using feedback, gained high scores. John said:

Because they help me learn Mandarin. Because, well like I tell you and then you tell me if I’m right or wrong. So, it will help me like, think. I knew that one was wrong, so after I knew it was wrong, I said the right one. It made me get the right word (John, 24/06/2010).

Therefore, students need to actively “use the feedback to produce improved work” in all aspects of the feedback process (Bound, as cited in Nicol & Macfarlane-Dick, 2006, p. 213).
Consequently, for formative assessment and feedback to work effectively, students need to take responsibility to actively construct an understanding of the feedback process so they can adjust their learning accordingly. Part of this process is teaching students how to learn – that is, how to:

- take responsibility for understanding the desired learning goals;
- perceive any gap between goals and their level of performance; and
- actively work to close this gap.

The fact that students are required to learn how to play a central and active role in the feedback process to improve learning is indicative of student-centred learning. Students are at the centre of learning processes because they actively participate in knowledge acquisition, and construct learning based on their own knowledge and skills (Hannafin et al., 1997; King, 1993; Oblinger, 2004; O’Neil & McMahon, 2005; Pivec et al., 2003). Knowing how to learn is one of those skills.

5.4.2 The role of teachers in formative assessment

The inability of the teacher-researcher to provide feedback to students in some cases is another reason why there was no significant improvement in learning for experimental groups. The teacher-researcher sometimes failed to provide feedback in time, or gave feedback that was too difficult for students to understand. This is consistent with the concerns expressed by researchers and textbook writers “that feedback to students might be delayed, not relevant or informative, that it might focus on low-level learning goals or might be overwhelming in quantity or deficient in tone” (Nicol & Macfarlane-Dick, 2006, p. 208). In order to promote student learning through formative assessment, feedback should be provided “in a timely manner” and focus “not just on strengths and weakness but also on offering corrective advice, that it directs students to higher order learning goals, and that it involves some praise alongside constructive criticism” (Nicol & Macfarlane-Dick, 2006, p. 208). These requirements for the content of feedback demonstrate that teachers need not only to assist students to understand their level of performance but also to provide a means for students to achieve learning goals. Teachers are not controllers of student learning or formative assessment. They are facilitators.
5.4.3 The impact of the beginning teacher on formative assessment

The failure of the teacher-researcher to deliver consistent and quality feedback was largely due to her lack of experience in assessment practice as a beginning teacher. Little training in assessment prior to teaching, and no practical experience in implementing formative assessment, meant that the teacher-researcher possessed inadequate skills in assessment. The teacher-researcher lacked the skill to provide feedback appropriate to student levels of learning. Beginning teachers lack a ‘teaching repertoire’ when they are compared with experienced teachers who have “a variety of techniques, skills, and approaches in all dimensions of education – curriculum, instruction and assessment – that teachers have at their fingertips to stimulate the growth of children with whom they work” (Wasley, Hampel, & Clark, as cited in Feiman-Nemser, 2001, p. 1018).

Prior beliefs of the teacher-researcher about learning and assessment could also explain some of the problems encountered with providing feedback. The majority, if not all, of the early learning experiences of the teacher-researcher required her to absorb and memorise knowledge, often with little understanding. Her experience of assessment was totally summative. Therefore, student passive reception of knowledge and demonstration of learning through summative assessment, were deeply entrenched. They were part of her identity as a learner. In addition, because she was a beginning teacher, her status as a learner had not yet been fully replaced by her view of herself as a teacher (Leask & Moorhouse, 2005).

Researchers have identified the profound influence of the beliefs of teachers from when they were at school (Feiman-Nemser, 2001; Watzke, 2007). Watzke (2007, p.73) suggests that “(p)rior knowledge based on experiences as a classroom learner may act as a filter to using pedagogy”. Consequently, although recent experiences as a teacher-researcher were very different, compared with her own experiences as a student, when under pressure in the classroom she may have unconsciously supported herself by moving into survival mode. She may have drawn on her prior beliefs, which included transmitting feedback instead of engaging in meaningful two-way discussions around learning:
It seemed that the way the feedback was communicated was problematic. I was afraid that I would not have time to assess the students that I planned to in the lesson. Instead, I merely told them what to change instead of asking them questions to stimulate their thinking and understanding (2/04/2010).

She may have provided feedback but not provided it in the way that she had learnt best facilitated learning. Some discussions may not have facilitated student understandings of the content covered in class, and they may not have included teaching students how to learn.

There was also a possibility that the control group was contaminated. The teacher-researcher was a novice teacher and researcher, so she sometimes blurred the distinction between control and experimental groups by accident. Therefore, students in the control group may have received unintended feedback and used it to help them learn. This is referred to as ‘contamination’ (Torgerson, 2001). Contamination of the control group “reduces the point estimate of an intervention’s effectiveness” (Torgerson, 2001, p. 355). Consequently, the expected differences between the control and experimental groups would not be as expected.

The fact that feedback was not provided consistently, also contributed to the reduced effect of the intervention. As a beginning teacher, the teacher-researcher was pre-occupied with classroom management and sometimes forgot to provide feedback (Leask & Moorhouse, 2005; Onafowora, 2005). The main concern for beginning teachers is their ability with and confidence in managing the classroom. Consequently, the preoccupation of the teacher-researcher with classroom management while students were engaged in activities and games, prevented her from devoting her full attention to facilitating student learning.

At times the teacher-researcher was unable to provide feedback at all. As a beginning teacher, she was always well prepared for each lesson. Lessons were carefully designed and each activity was thought through in terms of content to provide a stimulating and engaging classroom learning environment. Assessment strategies were carefully embedded and teaching strategies were checked for their consistency with a constructivist, student-centred approach to learning. However, when unexpected events disrupted a lesson, the teacher-researcher stuck to the original
lesson plan even if this meant not having enough time to assess students. Instead of modifying the lesson and allowing time for student assessment and feedback, preference was given to completing the delivery of content:

However, when I was reflecting on this lesson, I realised that students were speaking Mandarin when they were placing cards in the right order to form a dialogue. The assessment part did not go according to my plan, but there were actually many other chances to assess students. I could have assessed students from the very beginning of the activity – when they were forming their dialogue. I did not realise there were other chances, let alone seize the unexpected chances to assess the students I planned (15/06/2010).

There are a number of reasons that are possible explanations for this behaviour. Firstly, the beginning teacher reverted to ‘survival’ mode, so that her earlier belief system was activated and took priority over what she had recently learnt. Secondly, she lacked knowledge of assessment practices that would enable viable alternatives to be substituted. Thirdly, the teacher-researcher, as a beginning teacher, lacked sufficient judgement to realise that reduced time would be a consequence of her impromptu decisions. All these explanations are consistent with the beginning teacher literature (Wasley et al., as cited in Feiman-Nemser, 2001).

5.4.4 Contextual factors and formative assessment

Other contextual factors affected the effectiveness of the formative assessment process in a negative way. Students had a Mandarin lesson every two weeks over a short span of 13 weeks. During this time the teacher-researcher had to assess seven students in each lesson so that all the students could be assessed twice within the 13 week timeframe. The original research design was based on a lesson each week. However, the school situation changed and the total number of lessons had to be reduced. As this change occurred close to the period in which the research was to be conducted, it was not possible to change the research project. Instead, it was modified to accommodate the change.

Consequently, the number of students who were to be assessed in each 30 minute lesson became demanding. Not enough time could be allocated to each student to meet the requirements for effective feedback (Sadler, 1998). This meant that
discussions between the teacher-researcher and students were not thorough, and student questions were left unanswered:

I believe this activity would have been more successful if there was more time. More students would have been able to role play their dialogues and I would have been able to discuss their role-play with them (15/06/2010).

It was also likely that the length and intensity of the intervention was not enough to promote the desired increase in student learning. Years 2/3 students in the experimental group experienced the intervention on a fortnightly basis for 6 weeks, while the Year 4 student experience was for 7 weeks. Each student received formative assessment twice throughout the intervention. Consequently, students did not receive a great deal of feedback. It was also possible that students may have thought the formative assessment and feedback were more detached and external to their learning than was intended. They may not have been able to relate it to their learning, let alone use it to improve their learning. Sadler (1998) suggests that any investigations into the effectiveness of feedback on student learning, especially those based on experiments and quasi-experiments, “must be carried out for long enough for the new procedures to be viewed by learners as normal and natural” (p. 78).

The class teacher for the Years 2/3 control group was the teacher-researcher’s mentor. Consequently, she became more involved in Mandarin learning than the class teacher of the Years 2/3 experimental group. All these factors are likely to have an impact on the intervention and influence the findings. Consequently, they are all possible reasons that could be used to explain, either individually or in combination, the finding that there were no significant differences between the test scores for the control and experimental groups. Importantly, the literature on the stages of development for beginning teachers and the research about formative assessment help us to understand the reasons for the findings.

The reasons for there being no significant difference between the Year 4 control and experimental groups were almost the same as those for Years 2/3. Nevertheless, there were some additional contextual factors. Half the Year 4 students in the experimental group missed one Mandarin lesson, as they went out to perform in the choir: “because some students were at choir having an excursion, only half the students had
a Mandarin lesson” (01/06/2010). Therefore, these students missed a reasonable amount of the work covered during the intervention and subsequently were unfamiliar with some of the Mandarin words and sentences in the summative test. This is highly likely to be one of the reasons for the Year 4 group not performing as well as expected in the test.

During a discussion with the class teacher for the Year 4 control group it was explained that this class consistently performed at a higher level that the Year 4 experimental class, in both school and external assessments. This difference in academic performance may also explain why the Year 4 control group performed well in the Mandarin test.

5.4.5 Summary of summative test findings

Overall, two main reasons explain why the scores for the experimental groups were not significantly greater than the control groups. The first is that feedback was not delivered or used effectively and the second is that the teacher-researcher was a beginning teacher who lacked experience and some of the necessary skills to carry out the intervention effectively.

How to use feedback effectively is dependent on both students and teachers. Three conditions identified by Sadler (1989) indicate that to benefit from feedback, students must develop the capacity to evaluate their performance relative to desired goals, make adjustments and act accordingly (Sadler, 1989; Black & Paul, 1998; Nicol & Macfarlane-Dick, 2006). As feedback may be complex for students to understand and internalise, teachers are required to help students use feedback by “explaining what it is that students actually need to do in order to improve the piece of work, providing or clarifying the rationale behind particular tasks and monitoring the improvement so that students appreciate that it matters” (Scarino & Liddicoat, 2009, p. 70). This “implies and necessitates a partnership and a symbiotic relationship which works in a two-way system” (Taras, 2002, p. 506). Students and teachers have a mutual dialogical relationship within which to communicate feedback. Their dialogue starts with student responses, follows an ongoing discussion about how to understand feedback, and concludes with actions to reduce
the discrepancy between goals and student learning performance (Nicol & Macfarlane-Dick, 2006). The entire dialogue around learning increases the effectiveness of feedback (Nicol & Macfarlane-Dick, 2006; Scarino & Liddicoat, 2009).

There are always issues to be overcome and problems to be solved when beginning teachers enter teaching. According to Leask and Moorhouse (2005), beginning teachers experience three main phases in their professional development. As stated earlier, Phase 1 focuses on self-image and classroom management. Phase 2 focuses on whole class learning and Phase 3 focuses on individual student learning. In Phase 1, it is hard for beginning teachers to change their self-image from a learner to a teacher. What beginning teachers learnt to believe when they were learners in school can have a profound impact on their ‘default’ behaviour and the type of teachers they want to become. Classroom management is always of particular concern for beginning teachers and can sometimes blind them to other issues that require simultaneous attention. Only when they become used to and comfortable with basic classroom and teaching procedures can beginning teachers turn their attention to whole class and individual student learning.

In summary, the quantitative findings are in line with Sadler’s (1998) summary, that the results of quasi-experiments on the effectiveness of feedback on student learning may be delayed or masked by other factors. Students and teachers need to devote a great deal of effort and time to become used to formative assessment and feedback mentally, emotionally and physically.

5.5 Discussion of interview and other qualitative findings

The qualitative findings are discussed in terms of the three contributory research questions. The ability of classroom activities and games to engage students and promote their learning is discussed, as well as the problems associated with their use. The practice of embedding assessment in classroom activities and games is discussed in terms of its ability to promote learning. The discussion explores why students, teachers, and the teacher-researcher viewed embedded assessment as one way to
successfully promote student learning. The discussion also investigates the reasons for the problems associated with implementing embedded assessment, and discusses time as one of the constraining factors encountered throughout this study.

5.5.1 Student engagement with classroom activities and games
A variety of reasons were cited that explained student interest, engagement and motivation. These were consistent with a constructivist, student-centred approach to learning that considered student learning styles. Learning a foreign language was found to be somewhat daunting for some primary aged students. Nevertheless, the fun element associated with activities and games promoted student engagement with language learning. It created a positive learning environment where students were more willing to learn, try hard and even take risks. Having fun while being engaged in activities and games encouraged students to develop positive emotions and become highly motivated (Hromek & Roffey, 2009). The creation of a motivating and safe learning environment is a precondition for student-centred learning. Varied activities and games maintained student interest because they experienced something new and different every lesson. Moreover, the wide range of activities and games were characterised by a diversity of sensory stimulation. Some activities were visual, some were auditory and others were kinaesthetic.

The diversity of activities and games, along with complementary visual and auditory support, catered for a range of student learning styles. Consequently, student learning preferences were catered for, and this increased their engagement and motivation to learn Mandarin. According to Banner and Rayner (2000), catering for student learning styles respects and responds to individual differences in the classroom. It reflects a student-centred approach to learning.

The hands-on activities provided students with opportunities to actively engage in learning. Students like learning by ‘doing’ (Hannafin, et al., 1997). Personal and direct experiences have benefits for learning. Rogers (2002) points out: “(t)he more actively involved students are in their own learning, the more they are likely to remember what they learn” (p. 2). Students enjoyed self-determination and personal control during the activities and games because they were able to decide what to
write, draw, or say. Students were not passive recipients of information who merely followed instructions. The learning environment encouraged them to make choices. There was a sense of ‘freedom’ to learn. Student autonomy is a characteristic of student-centred learning and, as Rogers (2002, p. 2) argues, when “students have choices and make decisions about learning” they are more inclined to take some responsibility for their learning.

Student engagement with classroom activities was facilitated by close connections between classroom activities and previous student experience, interest and background. Students like to bring their personal life and experiences to the classroom and to integrate them with current learning experiences. This view was supported by student preference for a role-play activity that asked students to order food in a Chinese restaurant.

From a social constructive perspective, students learn through interaction with their real and immediate environment, particularly when it is related to their social interests. Rogers (2002) suggests that if activities and games are related to “the students’ personal lives and areas of interest and experience (personalisation), the students are more likely to become involved in the lesson” (p. 2). The contexts for the activities and games were chosen from those the teacher-researcher and classroom teachers thought students would have an interest in and experience of, in their everyday lives. Mrs T praised this relatedness: “Your strategies are really good, like you relate to everyday experiences” (28/06/2010). According to Rogers (2002) and Hromek and Roffey (2009), when students are provided with a classroom connection to their daily lives it helps them to learn. From a social constructivist perspective, learning is situated within a defined context that is familiar, real and relevant. Consequently, the teacher, as a facilitator of learning, is creating an emotionally secure learning environment (Hromek & Roffey, 2009). It is the role of a facilitator to provide such scaffolding for student learning (Vygotsky, as cited in Rogoff, 1999).
5.5.2 Student learning through classroom activities and games

Activities and games provide students with opportunities to participate in an active learning process and acquire new knowledge through connections with previous and existing settings. Students are able to learn Mandarin in context, to facilitate mastery. Learning is situated in a familiar context. However, it is not only the Mandarin language that students learn, they learn about Chinese culture. Often, the connection with Chinese culture is through aspects of their own culture. This is consistent with Mrs W’s comment on how Mandarin relates to students’ own culture.

Learning that connects existing cultural experiences with new and sometimes very different cultural experiences is consistent with constructivism (Oblinger, 2004; Shepard, 2000). Such connections encourage autonomy because students feel confident to make decisions. Consequently, the activities and games were open-ended, which meant that students were required to make decisions about how to use their Mandarin knowledge to complete the activities. Therefore, with some sense of control over how they engaged with activities, students were able to take more responsibility for their learning (Lea et al., 2003).

Group work enabled students to interact with each other, discuss their learning and make decisions to achieve outcomes. Negotiation and decision making during the learning process is a characteristic of student-centered learning (Rogers, 2002). In addition to academic outcomes, students benefit from the social and communicative skills acquired during group work. Cooperative learning is also a feature of a social constructivist view of learning, because learning is constructed through social interaction.

Repetition was cited as one way to promote student learning. The repetition of Mandarin words and phrases stimulated students. This is not saying that repetition promoted understanding, but rather that repetition helped students memorise information which they could then draw on to help them construct understandings. Repetition was viewed as an important tool that could be used to promote understandings (Strydom & Du Plessis, 2000). It was not seen as an end in itself. Teacher comments on how repeating Mandarin words and phrases helped students
become familiar with vocabulary as a first step in their learning new vocabulary supported the role of repetition in student learning.

5.5.3 Problems associated with activities and games

Although small group work played an important role in constructivist learning, and is a recommended teaching strategy in the second language classroom, there were some issues that influenced the effectiveness of group work. Peer ‘blame’ as a consequence of being over-competitive, reluctance to share, and incompatibility with group members, adversely affected some group dynamics. For group work to work effectively, a positive ‘socioemotional’ ethos needs to be established and sustained (Blatchford, Baines, Rubie-Davies, Bassett, & Chowne, 2006). The fact that some students did not have an individual turn to practise their Mandarin is not consistent with the desired outcomes of group work. Group work is a form of cooperative learning to achieve common goals. Students need to involve themselves and be permitted to become involved as they participate, as a part of group dynamics (Blatchford et al., 2006). If students are passive and allow other students to ‘take over’, cooperative learning will not be effective. Researchers (Blatchford et al., 2006) argue that these problems may be caused by teacher and student lack of trust, as a component of group work. Students, in particular, may not have developed the interactive skills necessary for productive cooperative learning (Webb & Palincsar, as cited in Blatchford et al., 2006).

The findings highlight the novice status of the teacher-researcher in terms of her professional development. All classroom teachers provided suggestions for more effective classroom management. Classroom management is always a challenge for beginning teachers (Jacklin, Griffiths, & Robinson, 2006). It sometimes prevents teachers from delivering quality lessons. Consequently, to promote teaching and learning, classroom management should be addressed as a priority. Classroom management is related to the confidence a teacher has in their identity as a teacher and in their ability to motivate students (Jacklin et al., 2006; Onafowora, 2005). It is also important that the strategies used to manage the classroom should be consistent with the teacher’s view of teaching (Jacklin et al., 2006). Beginning teachers learn classroom management skills from their personal experience and from the advice
provided by more experienced teachers. Over time they integrate all the advice received with their personal experience to build their own repertoire of classroom management.

Another suggestion made by teachers, which is consistent with a constructivist view of teaching and learning, is that teachers should facilitate learning by scaffolding student understandings of new content (Hromek & Roffey, 2009). Scaffolding functions to promote student learning. However, it is best presented in a way that challenges students and develops higher thinking skills, rather than simply providing students with answers (Hromek & Roffey, 2009).

Overall, the findings provided a number of reasons that explain how activities and games effectively engaged students and promoted Mandarin learning. All the reasons were consistent with constructivist views of teaching and learning. They were all consistent with placing students at the centre of the learning process so they could take some responsibility for their knowledge construction. The role of the teacher as a facilitator of learning is crucial in a classroom characterised by a constructivist learning environment. The findings also revealed issues that had a negative impact on the implementation of group work. From a social constructivist perspective, these issues detracted from the social interactions associated with cooperative learning. As a beginning teacher, the teacher-researcher had to work on improving her classroom management skills and pedagogy simultaneously. As a facilitator of learning, she had to develop the skills necessary to scaffold student learning effectively without providing direct instruction.

5.5.4 Embedding formative assessment in classroom activities and games
Students in the experimental groups expressed positive feelings about being assessed. A number of reasons were identified from the data analysis, to account for these positive feelings. The main reason was the natural or seamless integration of formative assessment practices in the activities and games. Although assessment was identifiable in each lesson, it was seen as a component of the activity. Consequently, students did not feel anxious about assessment and they did not panic when it became their turn to be assessed. Integration of assessment into activities and their
being perceived as a ‘normal’ part of classroom practices is an important feature of
good formative assessment practice (Haydn, 2005). As students learnt through
participation in activities and games, the integration of formative assessment into
them meant assessment was ‘just another’ learning experience. This is consistent
with the view of Gardner (2005), who said assessment should occur in the context of
students working on problems which genuinely engage them and motivate them to
do well.

Students like to be happy, and communicate their happiness when they perform well
in an activity. They also like their performances to be recognised. Most of the
activities and games were open-ended, and this provided opportunities for students to
demonstrate their individual performances and for the teacher-researcher to monitor
the diversity of student learning.

The seamless embedding of assessment in activities and games is compatible with
the way students learn when they engage and participate in activities, because they
construct knowledge and understandings while interacting socially. The formative
assessment practices were designed to help students shape and improve learning
through analytical conversations between the teacher-researcher, the students and
their peers. In this way, formative assessment is consistent with constructivist views
of learning. The fit between the assessment practices and the way students learn is a
necessary requirement for seamless embedding of assessment.

There was no anxiety or nervousness among students about assessment, because it
was a ‘low-stake’ activity. Students knew there would be no ‘punishment’ if they did
not perform well. In fact, they would be rewarded because they would know what
was required to improve their performance. Assessment practices, as they were
experienced by students in the classroom, provided learning information and helped
them to improve. Ranking of student performance was not part of the assessment
process. Consequently, feelings of superiority or inferiority were not generated as a
result of comparisons. The ‘low-stake’ learning environment reduced tensions and
encouraged students to make an effort and to take a risk with their learning. The
comment of Mrs M supported this view:
They don’t seem to be intimidated by you or feel that they’re being tested, I think. You do it so calmly that they think it’s just part of the lesson and it is just very smooth for them. There’s no anxiety (28/06/2010).

This is an important advantage of formative assessment over summative assessment, which is notorious for its ‘high-stake’ reputation. Students are intimidated by summative assessment and see it as something separate from normal classroom practice (Stiggins, 2002). Another advantage of embedded assessment as a normal component of lessons is that students are not required to spend class time being assessed in a way which does not contribute to their syllabus related learning. In addition, they do not have to spend time developing a set of skills specifically for tests.

Students felt less anxious while being assessed in class, because they felt confident that it accurately demonstrated their level of performance. Embedded classroom assessment practices were able to monitor student learning more accurately because students were able to demonstrate what they had learnt as well as where additional effort was required. Under these conditions it would be unlikely that the teacher-researcher would gain a false impression of student competence. It is frustrating for students when they feel they know more than ‘the test’ scores indicate. According to McDonald (2001), some students manifest ‘performance anxiety’ when they are confronted with high-stake tests. Consequently, some student test performances may fall short of the actual state of their learning. A more accurate reflection of student learning is another advantage of formative assessment.

In summary, positive student feelings about being assessed were indicative of the success of embedding assessment in classroom activities and games. There were clear advantages of formative assessment over summative assessment. Formative assessment is more acceptable to students because it does not threaten their self confidence. It is more learning-focused and more accurate at assessing student knowledge and understandings, as well as identifying gaps between desired outcomes and performance.
5.5.5 Student learning through embedded assessment

In contrast to the quantitative findings from the test scores, students, class teachers and the teacher-researcher all voiced positive comments about the effectiveness of formative assessment in promoting student learning of Mandarin. Their views were based on their classroom experiences, observations and reflections. There were a number of reasons cited to explain the effective role that formative assessment played in learning.

5.5.5.1 Realisation of the learning gap

Teacher-researcher feedback showed students whether their pronunciations were accurate and how to improve them if they were not. Feedback was also essential in helping to sort out problems with grammar and sentence construction. According to Haydn (2005), the heart of formative assessment is gaining information about student progress. In order to improve learning, it is important to identify the areas where students have done well, and the factors that impede learning. Feedback provides students with “a self-awareness of their comparative strengths and weakness and priorities for future learning” (Haydn, 2005, p. 307). Researchers (Sadler, 1989; Black & Wiliam, 1998a; Haydn, 2005; Nicol & Macfarlane-Dick, 2006) point out that realising the gap between current student performance and desired performance is a starting point, and a necessary step for students to close the gap and improve learning. Feedback enables students to understand where they are in the learning process so they know what they need do to achieve the learning goals ahead of them.

Students were engaged in learning when they received feedback. As students still remembered clearly what they had done, they could better understand and use feedback that specifically targeted their performances. Because students were active participants in the two-way feedback process, they were able to direct the learning discourse and seek clarifications they thought were necessary. Language learning through assessment was interactive, mutually constructed and beneficial. This view is supported by Scarino and Liddicoat (2009), who claim that “assessment in language learning is essentially formative – achieved through action-related talk, with the teacher continuously noting responses and questions” (p. 73).
5.5.5.2 Teacher learning from feedback

Feedback improves teaching as well as learning. Feedback dialogue enabled the teacher-researcher to identify student difficulties and needs. Often, these difficulties were not specific to one student. Consequently, teaching was adjusted accordingly. Teacher feedback was generated, based on student responses to questions as well as on teacher observations of student behaviours. Before initiating an assessment dialogue, the teacher-researcher had some expectations about student learning. However, these expectations were sometimes not accurate. For example, student feedback enabled the teacher-researcher to conclude that some content she assumed difficult was actually relatively easy for students, while other aspects of the work she thought were easy were in fact difficult:

In the assessment, I found with great surprise that the words which I had assumed difficult were easy for students. Students pronounced Japan and New Zealand almost perfectly. They not only got the syllables right but also the tones. However, when it came to the supposed ‘easy words’, like Australia, China, France, U.S.A and U.K, students always had difficulty with the tones. I pointed this out and corrected the mistakes every time but the next time they made the same mistakes again. So, I had to teach them in a different way (09/03/2010).

Feedback also exposed problems that may have otherwise been ignored. For example, the teacher-researcher found: “Some students actually were able to say the Mandarin words; however, they needed others, especially me, the teacher to initiate speaking” (25/05/2010).

As the teacher-researcher gained more insights into student needs and problems as a result of feedback sessions, she adapted her teaching accordingly. Therefore, the teaching became more focused and better tailored to student needs. Consequently, student learning would improve. Feedback increases teacher knowledge about what to do next, such as reinforce particular content, clarify certain concepts or change teaching approaches. Feedback not only informed future teaching plans but stimulated immediate changes to classroom practice. Assessment becomes formative assessment when feedback is actually used to “adapt the teaching work to meet learning needs” (Black & Jones, 2006, p. 4). The adaptation of teaching as a consequence of feedback emphasises the teacher’s role as a facilitator of learning.
Teachers do not control nor decide what students learn as a consequence of their teaching. Rather, teachers adapt and tailor their teaching to better assist student learning.

5.5.5.3 Motivation from feedback

Feedback engaged and motivated students because it showed students that the teacher-researcher appreciated their efforts to learn and improve their performance. Students were happy to know that their efforts were acknowledged by the teacher-researcher. Showing students that teachers take an interest in their work is a very basic but very important purpose of assessment (Haydn, 2005). Students who are not avid scholars would be disgruntled if they were left feeling that their efforts had not been recognised or appreciated (Haydn, 2005). Feedback acknowledges student efforts in a timely and careful manner. Feedback interacts with motivation. It is capable of influencing how students feel about themselves (Nicol & Macfarlane-Dick, 2006). When students know their efforts have been appreciated, they feel good about themselves. They think that their efforts have ‘paid off’ so they are motivated to learn. This is a form of extrinsic motivation. Moreover, as formative assessment is integrated with learning, feedback is provided more frequently, so students receive constant acknowledgement and encouragement from teachers. This enables student motivation to be ongoing.

Feedback provided students with a clear picture of what they can do correctly, as well as what requires improvement. More specifically, it enabled the student to quantify for themselves how far they were from desired learning goals and required standards. This information provided students with opportunities to reflect on their work and revisit thinking that led to incorrect answers. It provided a basis for them to modify their thinking for the next time. Over time, and through repeatedly drawing on a number of examples, students can build a picture of how they learn and adapt the way they approach learning experiences accordingly.
5.5.5.4 Acting on feedback

Students improved their learning in response to feedback, which explained to students what they needed to do to close the gap between their actual and desired performances. When it comes to how feedback influences learning, it is important that it lead to real changes in student behaviour (Yorke, as cited in Nicol & Macfarlane-Dick, 2006). Only when students take action to close the gap is the feedback loop completed and students can benefit from feedback (Sadler, 1989). The sequence work produced by students can tell whether feedback improves student learning. How students use feedback, directly affects student learning. Student learning results were positively correlated with their experiences in using feedback.

Kurt, who scored a high mark in the summative test, commented that he reinforced the right answers, corrected the wrong answers and kept practising, according to feedback. Santana, who achieved a low score, had not the slightest idea how to improve learning according to feedback.

Most students used the feedback received from the teacher-researcher to correct the wrong answers and work on the imperfect answers, in attempts to generate improved answers in the same task or on the next level of the task. There are two ways to interpret how students used feedback to promote learning: one is redoing the same assignment, and the other is producing improved work in the next assignment (Bond, as cited in Nicol & Macfarlane, 2006). This means that in order to better serve students, feedback should “help students to recognise the next steps in learning and how to take them both, during production and in relation to next assignment” (Nicol & Macfarlane, 2006, p. 213).

Relying on feedback to promote student learning is consistent with constructivist views of learning. Students and teachers communicate feedback in a dialogical relationship. Through this social interaction, students develop understandings of knowledge. They then internalise new knowledge by relating it to their own prior knowledge. Consequently, students master new knowledge and shape new learning. As knowledge is actively constructed by students rather than passively transferred to them, students truly understand knowledge or content and therefore remember it more clearly. Teachers mediate between students and the knowledge or content they are to learn. Providing feedback to students for them to understand, so they can close
the gap, is essentially scaffolding. Feedback from teachers helps students to recognise the next steps in learning and how to take them. According to Vygotsky, teachers are adults who provide expertise and opportunities to help students internalise knowledge and reach higher levels of learning. Through the collaborative work of students and teachers, feedback and formative assessment promote more effective learning.

5.5.6 Problems with the implementation of formative assessment

The fact that some students were not used to formative assessment exposes some problems in the implementation of formative assessment on the part of students. One of the main problems may be that students are still strongly influenced by summative assessment. Students are used to external assessments, so it is hard for them to easily relate to formative assessment that is an integral part of the learning process. Students are familiar with scores telling them how they have learnt. Therefore, they expect scores in formative assessment to indicate their level of learning. For example, Santana claimed that she did not have a clear idea of how well she had learnt because she did not know the results. Students are so used to scores being part of assessment processes that formative assessment without scores makes them feel uncomfortable and insecure. The failure of students to recognise the differences between summative assessment and formative assessment hinders the implementation of formative assessment. Another problem may be that students have not developed adequate understandings of formative assessment, nor the capacity to deal with it so that they can make use of it to improve their learning. Students should not be expected to enter the world of formative assessment unprepared. They need to understand the principles of formative assessment and how to use feedback in their favour. Sadler argues: “Students should also be trained in how to interpret feedback, how to make connections between the feedback and the characteristics of the work they produce, and how they can improve their work in the future” (Sadler, 1998, p. 78). It is important and necessary that students receive education in formative assessment beforehand.

The problems associated with the implementation of formative assessment, on the part of the teacher-researcher, expose her lack of knowledge and skills in formative
assessment. These problems highlight the importance of providing beginning teachers with professional learning in the area of formative assessment. Heritage (2007) points out that teachers require specific knowledge and skills so that they can use formative assessment successfully in the classroom. A major investment in beginning teachers is necessary, for them to develop and practise the skills of assessing before they are responsible for assessing in a classroom (Heritage, 2007). Beginning teachers in particular require professional learning as they develop as teachers. A lack of experience, as well as of knowledge and skills in assessment, impedes the successful use of formative assessment in classrooms. In order to better assess students, teachers need to learn from extensive, first-hand assessing experience “a wide variety of ways in which the students approach problem solving, and how they argue, evaluate, create, analyse and synthesise” (Sadler, 1998, p. 81). However, this is the result of the cumulative experiences of hundreds of assessments.

5.5.7 Time as a constraint

The time factor constrained both teaching and learning. The teacher-researcher had a heavy workload, due to limited work time. Students lost opportunities for individual practice. Teaching and learning were to some extent compromised. Class teachers and the teacher-researcher perceived a lack of time to be frustrating for teaching and learning. The time factor also hugely hindered the effect of formative assessment in promoting learning. When the teacher-researcher felt pressure from time constraints, she shortened the discussion about feedback, provided feedback before students finished their work, or transferred feedback in a teacher-centred way rather than communicating it in a way more consistent with student-centred approaches. Time constraints negatively impacted the content and delivery of feedback and undermined the role of feedback in helping students learn. Students needed more time to practise and develop understandings in response to the feedback received. It takes some time for students to truly close the gap and internalise knowledge. These findings are consistent with research which has found that the ‘time’ factor is the most prominent obstacle that affects “every stage of the assessment process starting with the planning phase, moving on to the delivery and administration and culminating in the data analysis phase” (Inbar-Lourie & Donitsa-Schmidt, 2009, p. 197). All these findings highlight the importance of the ‘time factor’ in teaching, learning and assessment.
Yet ‘time’ as a factor in teaching and learning has always been trivialised and marginalised to the point where, although it is recognised as an important factor, it is not really acted upon. It is accepted as an immutable constraint. The suggestions made by classroom teachers demonstrate that the adequate allocation of time, both as part of an individual lesson and in terms of the number of lessons, are a necessary condition for good teaching, successful implementation of formative assessment and consequently, a better learning environment.

5.6 Conclusion

The discussion has highlighted the finding that the Mandarin test scores showed there was no significant difference between the control and experimental groups, while the views of students, teachers and the teacher-researcher indicated that the experimental groups were learning Mandarin more effectively than the control groups. The discussion attempted to understand the reasons for this difference, while focussing on answering the research questions. The use of activities and games and the embedded assessment, embodied a constructivist and student-centred approach to teaching and learning. This study showed that student understanding of assessment and their capacity to interpret and act on feedback was central to the effective use of embedded assessment. The study also showed that it is important for teachers to develop knowledge and skills in assessment, such as providing timely, quality feedback.

The study also showed that there were both positive and negative effects of a beginning teacher undertaking such a study. The negative side of the equation saw the study being compromised by the lack of knowledge and skill demonstrated by the beginning teacher as she attempted to conduct the study. On the positive side, the act of engaging in a research project that connected directly with classroom practice meant the teacher-researcher was constantly engaging with relevant theory, being mentored by more experienced teachers and engaging in reflective analysis of her progress as a teacher. The fact that she had to identify and overcome her knowledge and skills gaps so the study might proceed, meant that there was a set of both intrinsic and extrinsic reasons for her to improve her classroom practice. The
research study enabled her to ‘stand back’ from her classroom performance and assess it more professionally, to meet the study’s requirements. Although classroom performance can be a personal concern, it was able to be addressed in a way that did not overly compromise self esteem. The research study facilitated the professional development of the beginning teacher.

The study showed that time was an important factor in all aspects of teaching, learning and research. As the move towards more student-centred teaching practices, such as embedded assessment increases, there is an associated increase in the need for more time. Time is required to teach students about assessment and their role in it. Time is required to ensure that classroom practices are effective and directed towards facilitating learning. The discussion has highlighted that the processes of teaching and learning are undergoing paradigmatic shifts and as such, classroom practices, including time allocation, need to accommodate such shifts.

Chapter 6 explores the implications of this study in terms of student assessment, teacher assessment and the influence of teacher assessment on student assessment. It discusses the implications for assessment, curriculum and pedagogy generally, as well as the implications for research. Implications for future research are explored in detail and the theoretical framework developed to inform this study is modified in view of the study findings.
Chapter 6: Implications and Conclusion

6.1 Introduction

This study draws on the view that assessment has recently confronted a paradigmatic shift, from one that objectifies students in a system of controlled and ‘technical’ scientific measurement where the learner is passive and assessment is viewed outside the learning process, to one that emphasises open, dynamic assessment systems that present students with opportunities for growth and transformation. Guba and Lincoln (1989) have referred to this new era of assessment as ‘responsive constructivist’. This new and evolving view of assessment shifts the emphases from absoluteness, certainty, and control to relativity and student empowerment. It employs an iterative and hermeneutic approach between teacher and learner to promote student learning, and is compatible with constructivist views of teaching and learning. From a more philosophical perspective, Doll (1993) has argued that this view of assessment responds to student learning needs and provides students with opportunities for growth and transformation by incorporating a student perspective. According to Habermas (1972), this new era of assessment not only supports student learning through knowledge construction in a social context but also advocates student empowerment in shifting control of learning from teachers to students, and that it emancipates students to reflect on their own learning. It engages and empowers students so that they can take responsibility for assessment and then learning.

Overall, this contemporary view of assessment is underpinned by constructivism, where the focus is on the student and on learning processes. This relationship is illustrated in Figure 6.1, which positions assessment as a process influenced by constructivist views of teaching and learning and characterised by specific influences or inputs that emerge as a series of outputs that describe desired learner attributes. The input column shows the ideas, values and beliefs invested, and the output column describes the outcomes in terms of potential impacts on the learner. This relationship views assessment as a process to promote change.
Figure 6.1 The theoretical basis of assessment for this study

The purpose of assessment, viewed from this perspective, is to transform students into active, responsible and responsive learners. Assessment takes on a pedagogical dimension. The emphasis is not only on finding out what is being learnt and how well learning is occurring but on the incorporation of a set of learner beliefs, values, attitudes and attributes. The overall purpose of assessment has changed fundamentally. It is no longer just a tool for collecting evidence used to “rank students or to certify the end products of learning” (Shepard, 2000, p. 31). It is a vehicle for attitudinal change. Students are provided with a learning environment that promotes a move from being passive participants in some of life’s important processes, to being purposeful and active learners. It was also found that in developing and implementing these views of learning, there was a significant influence on teacher learning. This in turn influenced student learning about assessment. Teacher views – even developing views – impact student learning.
6.2 Assessment and student learning

Formative assessment reflects views of constructivist, student-centred learning. It is a medium through which students can take more responsibility for their learning and development and actively increase their knowledge, understandings and skills in conjunction with values and attitudes promoted by schools, school systems and society in general. Therefore, it is important for students to have an appropriate, although elementary understanding of relevant aspects of learning theory. This would include some aspects of formative assessment so that they can use it effectively in their own learning environment. This study provided evidence that student lack of knowledge and understandings about how to learn, about what formative assessment is, what role they, as students, need to play in the assessment, and how to use it, restricted the effectiveness of formative assessment in improving student learning.

Although it was recognised that student understandings of assessment would have been a desirable part of the intervention investigated by this study, such understandings were not included as a component of the intervention. Students were not taught how to discern and understand learning goals and standards, to perceive learning gaps, use teacher feedback, and take action to close the gaps identified. In hindsight this should have been an important component of the study design. However, convention militated against their inclusion in the study design. It was easier not to teach students about assessment and assessment processes. The looming time constraints that were beginning to emerge as the study was designed may also have subconsciously influenced the ‘indecision’ that hovered around this aspect of the study. Time, or rather lack of time, emerged as a known but underestimated constraint in this study. Indeed, ‘lack of time’ may be a disclosed and obvious limitation on many studies. Yet there seems to be an almost universal acceptance of its inevitably negative influence. Consequently, formative assessment was not as effective as expected in improving student learning and subsequent student development.

Nevertheless, and despite the lack of a formal ‘teaching about assessment’ component of this study, the teacher-researcher did teach or at least try to teach students how to use components of the formative assessment process. However, as a
beginning teacher she did not have the knowledge, the expertise or the confidence to do this effectively. She did not have a clear view of what was required, what to do and how to do it. In short, failure to teach students about assessment and assessment processes to a large extent decreased the effectiveness of formative assessment and the potential for students to take responsibility for and improve their learning.

### 6.3 Assessment and teacher learning

This study showed that the effectiveness of formative assessment was negatively affected because the teacher-researcher, as a beginning teacher, lacked the knowledge, skills and experience in assessment processes generally and about formative assessment in particular to implement it. This study showed that beginning teachers need to learn about assessment processes and how to implement them. It showed that to effectively implement assessment, beginning teachers should be exposed to the view that assessment is simply one of a number of classroom practices that promote student learning. Beginning teachers should be taught to develop assessment objectives that reflect learning goals and standards, and to provide appropriate feedback to students in a way that students can understand. They should be encouraged to enter into dialogue with students about learning and provide students with the means to improve their learning. Beginning teacher skills include learning how to be good facilitators, being able to help students understand learning goals and standards, helping them learn how to interpret feedback in a way that benefits their learning and how to use feedback to correct and improve what they have learnt.

Classroom management is always an issue for beginning teachers. In this study, experienced teachers pointed out that teaching and assessment could be restricted by poor classroom management. Therefore, beginning teachers need to learn to manage classrooms. They also need to increase their confidence in using constructivist views of learning, student-centred pedagogy and formative assessment so that they do not retreat to less contemporary views of learning or rely on old teaching practices or views of assessment. This study demonstrated that when beginning teachers are under pressure they tend to revert to ‘reflex’ or ‘latent’ views of classroom practice.
and student learning. Consequently, the effectiveness of attempts to implement more contemporary views of assessment, teaching and learning is affected.

This study demonstrated that teacher learning is as complex and as important as student learning. It showed that student and teacher learning are interactive, synergistic and mutually beneficial. It showed that teacher learning, to a large extent, is interdependent with the desire to promote student learning.

6.4 The influence of teacher learning on student learning

Formative assessment is dedicated to the improvement of student learning and the empowerment of students to take responsibility for their own learning. Students are at the centre of assessment and learning. This is not to say that teachers are not important in the assessment process. On the contrary, teachers function to facilitate student growth and promote student learning. This study has demonstrated that beginning teacher learning about formative assessment and its implementation helped students engage not only with assessment practices but with learning more generally. Although not as effective as it could have been, student engagement with assessment did increase. What and how the beginning teacher learnt, had an impact on student learning. This study demonstrated that there was a positive relationship between beginning teacher learning about formative assessment and student learning.

At a more general and philosophical level teacher learning has, as a desired outcome, the promotion of student learning. The job of the teacher is to facilitate and promote student learning. As a consequence of attempts to promote student learning, teachers engage with and promote their own learning. Throughout the process of teacher learning, teachers are constantly researching, thinking, reflecting, consulting and assessing their progress. One strategy that teachers employ to assess their increased ability to facilitate and promote learning is to measure their success in terms of student success. Teachers self-assess in terms of student success. Teacher learning is assessed by the teacher; teachers employ self-assessment strategies. An extrapolation of this is that students can be taught to use self-assessment strategies as part of formative assessment processes. One of the outcomes of this study is the recognition
that teacher learning is promoted by self-assessment and consequently, the transfer of self-assessment to the student context could enhance formative assessment processes. In other words, formative assessment processes could be enhanced if they incorporated student self-assessment.

6.5 Implications for assessment

The effectiveness of formative assessment is dependent on the participation of both students and teachers. Formative assessment can promote learning most effectively when both teachers and students become actively involved and interact. They would both benefit from learning about and developing the skills required to implement formative assessment so they could effectively play their respective roles in the overall assessment process.

The implication of these findings for students is that assessment should be taught as a formal part of the curriculum. This is not to suggest that assessment should be taught in the same way or in the same amount of depth as it is to teachers. However, it is to suggest that students would benefit from being taught enough basic information about assessment, particularly formative assessment, to promote their understandings when they engage with its practice. Learning what underpins learning theory and formative assessment will help students understand what formative assessment means in terms of student learning, how it works, and how they are expected to engage with it. Students would benefit from learning how to take more responsibility for their learning. Learning goals, standards, and desired outcomes should be made explicit for students. Students would benefit from an environment in which they are consciously and explicitly invited to engage with and understand how they learn. They would benefit from being actively encouraged to assess what they are expected to achieve in a particular lesson. They would benefit from being taught how to relate what they have achieved in a particular learning segment to what they were expected to achieve, and to gauge the extent of any possible gap. Students should be encouraged to seek feedback and dialogue with teachers and peers about feedback. They should be taught strategies to close perceived gaps and enhance learning. Students would benefit from learning to seek help from teachers or peers actively.
Student learning as a consequence of these processes should promote self-assessment. Self-assessment should be the ultimate goal of any assessment process. It is perhaps the most effective way to empower students, facilitate their development and improve their learning. If a student is able to engage in self-assessment processes effectively, it is demonstrative of a set of skills, values and attitudes that will serve them throughout life in a number of ways. Self-assessment is effectively a skill for life and life-long learning.

The implication for teachers, especially beginning teachers, is that they would benefit from learning to implement formative assessment effectively and to help students benefit from it. Beginning teachers should learn to be good facilitators in learning and assessment. They would benefit from learning how to create a relaxing and supportive assessment environment, helping students understand what they are expected to achieve, providing and communicating quality feedback in appropriate language, using feedback to motivate students and inform their learning, and offering suggestions and advice for student improvement. Beginning teachers would benefit from learning how to manage the classroom while they are engaged in assessment with some students. They should ensure that students who are not involved in an immediate assessment process are monitored and engaged in alternative learning as part of their classroom management strategies. In the context of formative assessment, beginning teachers would benefit from learning to meet student needs and facilitate their continued development. Such learning could be gained during pre-service teacher education programs. However, in-service training programs, discussions with experienced teachers, and guided reflection on past experiences are also essential teacher learning experiences.

Actual engagement in formative assessment practices can facilitate teacher, and especially beginning teacher, professional learning. By participating in the implementation of assessment, beginning teachers can strengthen their understandings of constructivist views of teaching and learning, practise student-centred pedagogy and improve their teaching proficiency.

The effectiveness of formative assessment, in promoting student learning, increases when both students and teachers engage in its actual practice, as well as when they
engage with relevant theory. Figure 6.2 shows the relationship between student and teacher learning about formative assessment to promote specifically targeted student classroom learning more effectively. Without this connection it is suggested that the effectiveness of student learning will not be as great.

![Diagram showing the relationship between student and teacher learning about formative assessment](image)

Figure 6.2 Relationship between student and teacher learning about formative assessment

### 6.6 Implications for curriculum

Formative assessment should be supported by curriculum. Knowledge of and skills in implementing formative assessment practices should be embedded in the curriculum. Assessment knowledge and skills should be taught on a needs basis. It is not suggested that specific lessons should be devoted to assessment. Rather, assessment should be taught in context. As information is required, so as to understand assessment processes, it is taught. It would be useful to provide syllabus outcomes so that students are aware of the range of learning outcomes they are expected to demonstrate. Students would benefit from being provided with the
learning outcomes, as well as the criteria that would be used to assess them. There should also be opportunities for discussion and clarification between teachers and students so that everyone is clear about expectations and responsibilities. Assessment processes should be transparent, with requirements understood by all involved.

Assessment needs to be integrated into the curriculum along with other initiatives such as gender education, Indigenous education, environmental education and other cross-curriculum initiatives. The main purpose of assessment education would be to provide students with opportunities to take responsibility for their learning. Ultimately, students would be expected to employ self-assessment strategies and to interact with assessment requirements. Space and time would need to be allocated in the curriculum to accommodate this requirement. This study has shown that inadequate allocation of time, in terms of both length and intensity, is a problem that is often not addressed, even though it is known. This study has shown that neglect of this issue can result in consequences far in excess of those envisaged.

The curriculum should include challenging content with high yet attainable expectations. High standards promote deeper understandings and help develop higher order thinking skills. Shepard (2000) envisions that children, who are presented with more challenging problems while provided with the necessary support, will develop deeper understandings and skills for inquiry and reasoning which will benefit them in the future. One way of facilitating the successful negotiation of more challenging content is to provide student support in terms of transparency of assessment. If students are clear about what is required of them, they are more likely to undertake more difficult tasks. If the fear of the unknown is reduced or eliminated as much as possible, then students will be encouraged to attempt more challenging tasks. Consequently, demystifying assessment can provide curriculum developers with the opportunity to include more challenging content and so raise standards.

Curriculum can also increase the engagement of students by relating learning to student identity, existing knowledge, experience and interests. Knowledge acquisition is facilitated in the contexts of understandings and real life. Students can draw on what they already know and have experienced. They learn most effectively when they can connect new information with prior understandings. Curriculum
should align, not just with what society thinks is important to perpetuate, but equally it should embody a flexibility that is able to accommodate a diversity of student expectations, so that student responsibility for learning embraces their self-determined future. A curriculum that incorporates formative assessment will encourage and enable students to ‘forward think’. The curriculum itself will help students to think about their future. Such a curriculum will help students look to the future. It will encourage them to develop an appreciation of why learning Mandarin may be a constructive and strategic use of their time and effort when they are in Year 4, even though they may not use it until much later in life. It may even help them to work through why studying mathematics in Year 9 is worthwhile. A curriculum that provides students with foresight as one of its dimensions is not only inherently motivating, it is strategic. A curriculum that encourages students to have a view of their future and future learning needs is desirable.

Figure 6.3 Curriculum components compatible with formative assessment for student learning

Constructivist view of learning and teaching
6.7 Implications for pedagogy

This study has shown that formative assessment can be integrated with other classroom learning activities. Therefore, students would benefit from discussions with teachers and their peers about assessment as part of their normal learning environment. Consequently, a pedagogical component of classroom activities is the development of student skills that enable them to identify and actively participate in assessment processes. A pedagogical dimension of classroom activities and games is an assessment component accompanied by student interactions as part of that component. A more subtle aspect of this pedagogy is its efficiency. In order to ensure that formative assessment practices are carried out efficiently, pedagogy needs to be developed so that assessment can be undertaken as part of normal learning, with the time taken minimised because assessment is able to be undertaken in conjunction with other processes. Pedagogy needs to be developed so that assessment is completed without occupying time that could be used for other learning activities.

This study has shown that student-centred pedagogy is effective when implementing formative assessment to promote student learning. It has also shown that a constructivist view of teaching and learning facilitates the implementation of student-centred pedagogy. Teachers need to design learning activities that focus on developing student higher order thinking to deepen understandings. To achieve this, activities should be open-ended and allow students to draw on their past experiences, display their individual potential, construct their own understandings and solve problems in a way that makes sense to them. Learning is maximised when it does not limit student talents and capacity.

Repetition was found to be an effective pedagogical tool. Despite its reputation for promoting surface learning and being equated with rote memorisation, repetition was found to help students remember facts and basic ideas. It was found that it helped build a foundation for higher order thinking, deeper understandings and problem solving. This study demonstrated that repetition is an effective strategy for learning when it is used strategically in combination with a repertoire of other strategies.
This study also found that authentic learning contexts provided more meaningful and purposeful learning environments. Consequently, teachers should create opportunities for students to work with peers on tasks which relate to everyday life experiences. Working in groups can improve student social skills and help them learn to see alternative perspectives. It teaches tolerance and understanding and promotes respect for the ‘other’. However, this study also showed that students have to be taught skills that promote ‘cooperation’. Students do not naturally cooperate with each other. Social skills have to be learnt, and so the pedagogy associated with group activities and games has to accommodate this. Students have to be provided with a pedagogy that actively teaches how to work with peers – how to share, bond with peers and collaborate, regardless of and while respecting and accommodating, difference.

Pedagogy consistent with formative assessment accommodates student-centred learning and is constructivist in nature. More importantly, it provides a learning environment that teaches a set of values and facilitates the development of attitudes that help individuals take responsibility for their learning and thereby, accept and cope with responsibility more generally. It can be argued that by integrating formative assessment practices into the classroom learning environment, the pedagogy associated with this practice promotes learning for a socially responsible set of life skills.
6.8 Implications for research

This study has demonstrated the advantages of beginning teachers undertaking research. It has shown that the combination of researching theory in an attempt to inform and understand practice promotes contextual learning that promotes efficient and effective professional learning. This study has shown that a research-based pedagogy facilitated the progress of this beginning teacher through the stages of development identified in the literature (Leask & Moorhouse, 2005; Allen & Toplis, 2009; Fuller & Feiman-Nemser as cited in Arends, 2009). Research was shown to be an effective strategy for teachers to learn about their teaching, find out about problems that may exist and about what can be done to overcome them. Beginning teachers, in particular, can benefit from research as a way of taking responsibility for
their own professional development. Through a research approach to professional learning, beginning teachers are able to draw on their past experiences and reflect on their present experiences in a way that is informed by the literature and the experiences of others and that improves their practice.

Research enables beginning teachers to examine their practice and make changes to improve teaching and learning. Through inquiry, beginning teachers can identify the skills and knowledge they lack or need to strengthen, so they can improve. Research provides beginning teachers with opportunities to focus and guide reading and connect theory to practice. Beginning teachers therefore gain insights into their practice in a way that often provides a fundamentally different view not just of practice but of the context that informs practice. Research can be not just a source of information but a way to investigate it in a focused but powerful way, to view things differently. Research can provide a rich platform for professional learning.

This study has also demonstrated that beginning teachers should conduct research appropriate to their teaching ability. At times, beginning teachers may be tempted to conduct research that requires a skill set in excess of their ability to teach. This may inadvertently affect both the research undertaken and classroom practice. There is the possibility that research outcomes will be limited by teaching performance. Conversely, it may also be that classroom performance is compromised by the research being attempted. Sometimes, both the research and classroom performance can be negatively affected. This study required advanced teaching skills. The lack of teaching knowledge, skills and experience of the beginning teacher undertaking this study did negatively affect both the research and classroom performance outcomes. Therefore, the validity of this research is open to question. Having acknowledged this limitation, it should also be said that the overall learning, in terms of the process of research and classroom practice, was huge for this teacher-researcher. Conducting this study was extremely beneficial from these perspectives alone. In addition, the insights gained about embedded assessment were worthwhile, even though some of the study findings may have been different to what was expected.

It should also be stressed that an adequate amount of time should be allocated to ensure the effective conduct of research. In the case of research that attempts to
change practice, it is important to make sure that the time allocated does not become a limiting factor in the study. Sufficient time has to be allocated so that during inevitable periods of stress, the practices under investigation are sufficiently established for them to persist, rather than reverting to previous practices that are not part of the study. There is no ‘quick fix’ in research. Every research study deserves to be adequately resourced to ensure its validity. Time is a basic resource. Consequently, every research project deserves an adequate timeframe to ensure it has every chance to succeed.

6.9 Implications for future research

The ROSETE project was designed as a joint partnership between NMEB in China, NSW DET (Western Sydney Region) and UWS in Australia. The project enabled volunteer teacher-researchers to teach Mandarin in Australian schools for 18 months while completing a Master of Education (Honours) (Singh & Zhao, 2008). NSW DET benefited because native Chinese taught Mandarin in Western Sydney Region schools. NMEB benefits when the teacher-researchers return to China with their research skills and more diverse knowledge of pedagogy. The teacher-researchers benefit as a consequence of being immersed in a different culture that provides access to different and diverse knowledge and skills about teaching, learning and research, as well as different ways of ‘seeing’ the world.

The ROSETE project provided opportunities for this teacher-researcher to investigate and explore assessment as formative assessment, rather than as a process that has negatively impacted her views of teaching and learning for most of her life. In doing so, this study has allowed her to confront some of her personal demons. It has been a liberating experience. The knowledge, understandings and skills gained, as well as the first hand experiences of teaching and conducting research, will enable her to return to Chinese classrooms with the confidence to challenge what she had thought was sacrosanct. The ROSETE project, and in particular this study, will enable this teacher-researcher to realise her long-term dream to help emancipate students from the burden of summative assessment, which can have such a negative effect on student learning. It should also be added that this teacher-researcher has also learnt to
value a more complex view of assessment, where testing can be strategic and can benefit learning.

6.9.1 Development of a theoretical framework for assessment

This study has approached answering its research questions from a theoretical perspective. It developed a theoretical framework as a starting point when one could not be identified from the literature. This is not to say there is no theoretical framework for assessment. However, it is to say that one could not be found by this researcher in the literature used to inform this study. The theoretical framework developed was informed by constructivism and implemented an activity-based, student-centred view of teaching and learning. It was based on the work of Guba and Lincoln (1989), Doll (1993) and Habermas (1972). The findings from this study have highlighted the importance of viewing assessment as a component of the everyday classroom learning environment and identifying the interdependence of student learning and teacher learning. These findings are not new. However, they do emphasise assessment being viewed differently to the present dominant paradigm.

The framework developed has been modified or elaborated upon as a consequence of the findings from this study. The study findings have identified some components of curriculum and pedagogy that need to be considered if assessment is to be incorporated as an integral component of classroom activity. These components are outlined in Figures 6.3 and 6.4 and are influenced by and reinforce a constructivist, student-centred and activity-based view of teaching and learning. This framework views assessment as ‘responsive constructivist’ (Guba & Lincoln, 1989) and should be considered as a potential basis for theorising assessment and assessment processes more thoroughly. This framework could be used as a basis for further research that more ‘holistically’ develops the concept of assessment generally and ‘responsive constructivist’ assessment in particular. It enables assessment to be viewed more broadly so that it more clearly shows its relationships with curriculum and pedagogy.
6.9.2 Teacher education and beginning teachers

Although not a finding related to the research questions that directed this study, it has been shown that the teacher-as-researcher model of teacher education can be an effective way to promote the professional learning of beginning teachers. This model can help beginning teachers to gain greater insights into teaching and learning in terms of theory that informs practice as well as classroom practice in its own right. Consequently, it is possible that beginning teachers are better placed to apply theory to inform their practice so they can assess students in the context of curriculum and pedagogy more effectively.

This model also provides beginning teachers with opportunities to work with more experienced teachers in schools. The experienced teachers act as mentors who help beginning teachers improve their teaching practice and, at the same time, the mentor teachers acquire new knowledge and skills. The model provides a basis for an integrated and complex relationship among colleagues with different expertise. The model facilitates a culture of research in schools which is relevant to both the teachers and the needs of the school. This study has demonstrated that the teacher-as-researcher model can be further explored as an integrated model of teacher professional learning that may be able to accommodate a diverse range of teacher experience, expertise and learning needs.

6.9.3 Other areas for future research

This study has also shown that it is important for students to participate actively in the processes that contextualise assessment. Students benefit when they are informed about assessment in terms of its basic theory as well as its pragmatics. Students require help to reorient their view of assessment as part of everyday classroom learning. They benefit when they are taught to value the skills of analysis and learn how to use them to improve learning. Students benefit when they are provided with learning experiences that demonstrate the value of working cooperatively in groups. However, perhaps one of the most valued yet unintended insights to emerge from this study that would benefit from further research is that when assessment is merged with curriculum and pedagogy, the values and attitudes generated as students learn to take more responsibility for their learning become worthwhile in themselves.
It would be useful to purposefully investigate whether increased tolerance, acceptance and valuing of difference, as well as the values and attitudes embedded in initiatives such as anti-bullying programs, are enhanced as a consequence of implementing assessment practices that provide opportunities for students to self-assess and take more responsibility for their learning. The personal skills, values and attitudes that might be derived from and could be developed as a consequence of the active participation of students in assessment, may become an additional way to enhance the overall social development of students.

6.10 Assessment theory

The theoretical framework developed from the literature, as outlined in Figure 2.9, has been modified to incorporate the findings from this study.
Figure 6.5 Modified theoretical framework for assessment

Figure 6.5 no longer conceptualises assessment as external to curriculum and pedagogy. Rather, it views assessment as an integral part of learning and teaching in response to the curriculum and classroom pedagogy. Curriculum, pedagogy and assessment form an integrated and interactive whole, with each informing the other two. Hence, not only is there interaction between the components of curriculum, pedagogy and assessment, but some of the components overlap. Together they orchestrate student learning. In order for this relationship to be effective and for assessment to promote student learning, both students and teachers will benefit from
being informed about its purpose and practice. Students will have learnt or, in the case of younger students, will be learning how to actively participate in assessment processes while teachers will be learning how to implement assessment so that students will benefit from it.

The content of classroom activity will be expanded so that it will include not only knowledge and understandings, skills, values and attitudes derived from curriculum, but also pedagogy. Pedagogy will not only include the already developed practices associated with teaching and learning, it will be expanded to include new and developing pedagogies associated with implementing assessment. The relationship between curriculum, pedagogy and assessment will be dynamic and continual. Student and teacher learning will inform and support each other; the greater the interdependence, the greater will be the potential for learning. This interrelatedness should promote a classroom coherence focused on learning – student and teacher learning.

6.11 Conclusion

This study has shown that classroom activities and games were effective in promoting the learning of Mandarin. The activities and games were developed and implemented based on a constructivist view of teaching and learning and incorporated student-centred learning strategies. Formative assessment was successfully embedded in classroom activities and games as part of the overall learning process. Essentially, formative assessment became an integral part of the classroom learning environment. Consequently, embedded assessment was found to be a teaching strategy that may have promoted additional student learning. Embedded assessment provided feedback for students which may have helped them identify areas of deficiency and improve their learning. However, it should also be stated that the degree of effectiveness of embedded assessment was inconclusive, as indicated by summative testing. Consequently, although the main research question – Can assessment strategies be embedded in classroom activities and games to promote student learning of Mandarin more effectively? – is answered in the affirmative, the degree of its effectiveness requires further research and clarification.
This study developed a theoretical framework that positioned assessment in an integral and interactive relationship with pedagogy and curriculum. Assessment, pedagogy and curriculum informed and supported each other as they promoted both student and teacher learning. This study also demonstrated that the teacher-as-researcher model of teacher education may be effective in promoting the professional learning of beginning teachers, because it is possible for it to help them not only gain greater insights into teaching and learning, but also to establish mentoring relationships with experienced teachers. Experienced teachers may also benefit professionally from this relationship. The study also suggests that the fundamental changes associated with viewing assessment as an integrated component of the everyday classroom may have further implications for education generally. They may have implications for students developing more socially oriented values and attitudes, and may promote increased student responsibility, tolerance and understanding of others.
References


Ray, M. A. (1999). Critical theory as a framework to enhance nursing science. In M. C. Polifroni & M. Welch (Eds.), Perspectives on philosophy of science in


Appendix 1  Mandarin test for Years 2/3

A. Match the words with the pictures.

**Name**

miàn tiáo

nǎi náì

mǐ fēn

guǒ zhī

chá

zhōng guó

Yīng guó

Měi guó

Xīn xī lán

Rì běn

| Japan |
| U.S.A |
| U.K |
| China |
| New Zealand |
B. Label the parts of her head.

- 眼睛 (yǎn jīng)
- 鼻子 (bí zi)
- 耳朵 (zǔ ba)
C Fill in the table according to the passage below. Write answers in English.


<table>
<thead>
<tr>
<th>Name:</th>
<th>Nationality:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Eyes:</td>
<td>Nose:</td>
</tr>
<tr>
<td>Mouth:</td>
<td></td>
</tr>
</tbody>
</table>

D Translate the following sentences into English.

1. Wǒ shì Ào dà li yà rén.

2. Nǐ shì nà guó rén?
3. Tā yǒu xiǎo zuǐ ba.

4. Nǐ yào shén me?

5. Wǒ yào mǐ fàn.
Appendix 2  Mandarin test for Year 4

A. Match the words with the pictures.

mì fǎn

guō zhī

zhōng guó

Yīng guó

Mǎi guó

Xīn xī lán

Rì běn

Name ____________________________

Japan

U.S.A

U.K

China

New Zealand
B Label the parts of her head.

yǎn jìng  bi zi  zuǐ ba  ěr duo
C Fill in the table according to the passage below. Write answers in English.


<table>
<thead>
<tr>
<th>Name:</th>
<th>Nationality:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eyes:</td>
<td>Nose:</td>
</tr>
<tr>
<td>Mouth:</td>
<td>Ears:</td>
</tr>
<tr>
<td>Food:</td>
<td>Drink:</td>
</tr>
</tbody>
</table>

D Translate the following sentences into English.

1. Wǒ shì Ào dà lì yà rén.

2. Tā shì nǎ guó rén?
3. Tā shì Fǎ guó rén.

4. Tā yǒu xiǎo zuǐ ba.

5. Nǐ yào shén me?

6. Wǒ yào mǐ fàn hé (and) kě lè.

---

B. Translate the following sentences into Mandarin.

1. What is your nationality?

2. I have a small mouth.
Dear Parent / Carer,

Information Sheet for Parents/Carers (Experimental Classes)

Research Project: Assessment for Learning: Enhancing activities to learn Mandarin

Your child’s school is participating in the Assessment for Learning: Enhancing activities to learn Mandarin program being conducted by Yi Chen, Master of Education (Honours) student, School of Education, University of Western Sydney.

Assessment for Learning: Enhancing activities to learn Mandarin program is to explore the effectiveness of embedded assessment in teaching the Chinese language Mandarin. The study will develop and use activities and games to promote student learning. These activities and games will be constructed so they integrate student assessment. The assessment components will, in themselves, promote student learning. The study will benefit all students and school and will not cause any discomfort.

This study will benefit your child because each lesson will be carefully constructed to maximise student interest and motivation so that students will be engaged in learning Mandarin. Assessment strategies will be integrated into the activities and games to provide instant feedback about student learning. Consequently, this study will provide students with a series of high quality lessons as well as a mechanism to monitor their progress.

The teacher researcher will voluntarily teach Mandarin at the study site and the study will be conducted in existing Mandarin classes so that the study site will not be disturbed. This study will use a quasi-experimental design. Data will be collect from both control classes and experimental classes. All groups will be provided with activities and games while learning Mandarin that will interest and motivate all participants so that all groups will benefit from the activities and games while engaged in learning Mandarin. The difference between the control groups and the experimental groups will be that assessment will be embedded in the activities and games of the experimental groups. The control groups will not be disadvantaged because they will experience normal classroom practices, practices that would have existed without the research project being carried out. No group will be
disadvantaged. Normally, students learn Mandarin using summative assessment or no assessment. However, in this project all students will have the advantage of being motivated and interested in learning while being taught using activities and games.

Some students may feel ill at ease about the interview. The interview will be conducted in a caring and professional way so that students will be put at ease by the whole process.

I am asking your permission for your child to take part of this program. Your child will experience 10 to 20 minutes’ activities and games and also embedded assessment in the Mandarin lesson every Tuesday. They will be observed by the teacher-researcher. Some students will also be invited to participate in 15 minutes interviews to provide their views about the use of activities and games and embedded assessment. Your child will have a 30 minutes’ Mandarin test as part of the Mandarin learning. To help me find out the effectiveness of embedded assessment in teaching Mandarin, I also seek your consent to use your child’s test result and compare it with the results of the students from control classes.

Participation in this study is voluntary. There will be no adverse consequences for those who wish not to participate and / or those who withdraw participation after giving consent to be in the study. The information provided in this study will only be available to the researcher in this study. All published information will only be reported in group form that does not identify individuals or schools. You can tell other people about this study by providing them with the researcher’s contact details. If you would like more information about the project please feel free to contact the researcher.

If you consent to your child and / or yourself participating in this study, please complete the attached form and return it to your child’s teacher.

I do hope you are interested in participating in this program.

Yours sincerely,

Yi Chen
Master of Education (Honours)
School of Education,
University of Western Sydney,
Locked Bag 1797, Penrith South DC, NSW 1797, Australia.
Telephone: 0415340152; Email: 16836004@student.uws.edu.au

The researcher conducting this study is: Yi Chen, Master of Education (Honours) student, School of Education, University of Western Sydney. Please contact Yi Chen (Telephone: 0415340152; Email: 16836004@student.uws.edu.au) if you have any questions about this study.
Dear Parent / Carer,

Information Sheet for Parents / Carers (Control Classes)

Research Project: Assessment for Learning: Enhancing activities to learn Mandarin

Your child’s school is participating in the [Assessment for Learning: Enhancing activities to learn Mandarin] program being conducted by Yi Chen, Master of Education (Honours) student, School of Education, University of Western Sydney.

Assessment for Learning: Enhancing activities to learn Mandarin program is to explore the effectiveness of embedded assessment in teaching the Chinese language Mandarin. The study will develop and use activities and games to promote student learning. These activities and games will be constructed so they integrate student assessment. The assessment components will, in themselves, promote student learning. The study will benefit all students and school and will not cause any discomfort.

This study will benefit your child because each lesson will be carefully constructed to maximise student interest and motivation so that students will be engaged in learning Mandarin. Consequently, this study will provide students with a series of high quality lessons.

The teacher researcher will voluntarily teach Mandarin at the study site and the study will be conducted in existing Mandarin classes so that the study site will not be disturbed. This study will use a quasi-experimental design. Data will be collect from both control classes and experimental classes. All groups will be provided with activities and games while learning Mandarin that will interest and motivate all participants so that all groups will benefit from the activities and games while engaged in learning Mandarin. The difference between the control groups and the experimental groups will be that assessment will be embedded in the activities and games of the experimental groups. The control groups will not be disadvantaged because they will experience normal classroom practices, practices that would have existed without the research project being carried out. No group will be disadvantaged. Normally, students learn Mandarin using summative assessment or no assessment. However, in this project all students will have the advantage of being motivated and interested in learning while being taught using activities and games.
Some students may feel ill at ease about the interview. The interview will be conducted in a caring and professional way so that students will be put at ease by the whole process.

I am asking your permission for your child to take part of this program. Your child will experience 10 to 20 minutes’ activities and games in the Mandarin lesson every Tuesday. They will be observed by the teacher-researcher. Some students will also be invited to participate in 15 minutes’ interviews to provide their views about the use of activities and games. Your child will have a 30 minutes’ Mandarin test as part of the Mandarin learning. To help me find out the effectiveness of embedded assessment in teaching Mandarin, I also seek your consent to use your child’s test result and compare it with the results of the students from experimental classes.

Participation in this study is voluntary. There will be no adverse consequences for those who wish not to participate and / or those who withdraw participation after giving consent to be in the study. The information provided in this study will only be available to the researcher in this study. All published information will only be reported in group form that does not identify individuals or schools. You can tell other people about this study by providing them with the researcher’s contact details. If you would like more information about the project please feel free to contact the researcher.

If you consent to your child and / or yourself participating in this study, please complete the attached form and return it to your child’s teacher.

I do hope you are interested in participating in this program.

Yours sincerely,

Yi Chen
Master of Education (Honours)
School of Education,
University of Western Sydney,
Locked Bag 1797, Penrith South DC, NSW 1797, Australia.
Telephone: 0415340152; Email: 16836004@student.uws.edu.au

The researcher conducting this study is: Yi Chen, Master of Education (Honours) student, School of Education, University of Western Sydney. Please contact Yi Chen (Telephone: 0415340152; Email: 16836004@student.uws.edu.au) if you have any questions about this study.
Dear Principal,

Information Sheet for Principal

Research Project: Assessment for Learning: Enhancing activities to learn Mandarin

Four classes from your school are invited to take part in Assessment for Learning: Enhancing activities to learn Mandarin program conducted by Yi Chen, Master of Education (Honours) student, School of Education, University of Western Sydney.

Assessment for Learning: Enhancing activities to learn Mandarin program is to explore the effectiveness of embedded assessment in teaching the Chinese language Mandarin. The study will develop and use activities and games to promote student learning. These activities and games will be constructed so they integrate student assessment. The assessment components will, in themselves, promote student learning. The study will benefit all students and school and will not cause any discomfort.

Participation will involve:

- Students from one Year 3 class and one Year 5 class experiencing activities and games varying according to the content and the embedded assessment in Mandarin lessons; Student from one Year 3 class and one Year 5 class experiencing activities and games varying according to the content in Mandarin lessons.
- Small groups of students and all teachers being invited to participate in interviews at the end of the research.
- Students taking part in a Mandarin test
- Your consent to use students’ Mandarin test results at the end of the research.
- Teachers discussing the relative success of activities and games and in the case of experimental classes, assessment after each Mandarin lesson.
- Distributing and collecting parental permission letters.
Participation in this study is voluntary. There will be no adverse consequences for those who wish not to participate and / or those who withdraw participation after giving consent to be in the study. The information provided in this study will only be available to the researcher in this study. All published information will only be reported in group form that does not identify individuals or school. You can tell other people about this study by providing them with the researcher’s contact details. If you would like more information about the project please feel free to contact the researcher.

If you consent to your school participating in the study please complete the attached form and give it to the researcher. I do hope you are interested in participating in this program.

Yours sincerely,

Yi Chen  
Master of Education (Honours)  
School of Education,  
University of Western Sydney,  
Locked Bag 1797, Penrith South DC, NSW 1797, Australia.  
Telephone: 0415340152; Email: 16836004@student.uws.edu.au

The researcher conducting this study is: Yi Chen, Master of Education (Honours) student, School of Education, University of Western Sydney. Please contact Yi Chen (Telephone: 0415340152; Email: 16836004@student.uws.edu.au) if you have any questions about this study.
Dear Teacher,

**Information Sheet for Teachers (Experimental Classes)**

**Research Project: Assessment for Learning: Enhancing activities to learn Mandarin**

You are invited to take part in a study on Assessment for Learning: Enhancing activities to learn Mandarin program being conducted by Yi Chen, Master of Education (Honours) student, School of Education, University of Western Sydney.

Assessment for Learning: Enhancing activities to learn Mandarin program is to explore the effectiveness of embedded assessment in teaching the Chinese language Mandarin. The study will develop and use activities and games to promote student learning. These activities and games will be constructed so they integrate student assessment. The assessment components will, in themselves, promote student learning. The study will benefit all students and school and will not cause any discomfort. Teachers involved in this project will benefit because they will gain insights into the role of activities and games in teaching and assessment.

**Participation will involve:**

- **Teachers discussing the relative success of activities, games and embedded assessment after each Mandarin lesson.**

- **Teachers being invited to participate in interviews to obtain their views about the use of activities, games and embedded assessment at the end of the research.**

Participation in this study is voluntary. There will be no adverse consequences for those who wish not to participate and / or those who withdraw participation after giving consent to be in the study. The information provided in this study will only be available to the researcher in this study. All published information will only be reported in group form that does not identify individuals or school. You can tell other people about this study by providing them with the researcher’s contact details. If you would like more information about the project please feel free to contact the researcher.
If you consent to participating in the study please complete the attached form and return it to the researcher. I do hope you are interested in participating in this program.

Yours sincerely,

Yi Chen  
Master of Education (Honours)  
School of Education,  
University of Western Sydney,  
Locked Bag 1797, Penrith South DC, NSW 1797, Australia.  
Telephone: 0415340152; Email: 16836004@student.uws.edu.au

The researcher conducting this study is: Yi Chen, Master of Education (Honours) student, School of Education, University of Western Sydney. Please contact Yi Chen (Telephone: 0415340152; Email: 16836004@student.uws.edu.au) if you have any questions about this study.
Dear Teacher,

**Information Sheet for Teachers (Control Classes)**

**Research Project: Assessment for Learning: Enhancing activities to learn Mandarin**

You are invited to take part in a study on Assessment for Learning: Enhancing activities to learn Mandarin program being conducted by Yi Chen, Master of Education (Honours) student, School of Education, University of Western Sydney.

Assessment for Learning: Enhancing activities to learn Mandarin program is to explore the effectiveness of embedded assessment in teaching the Chinese language Mandarin. The study will develop and use activities and games to promote student learning. These activities and games will be constructed so they integrate student assessment. The assessment components will, in themselves, promote student learning. The study will benefit all students and school and will not cause any discomfort. Teachers involved in this project will benefit because they will gain insights into the role of activities and games in teaching and assessment.

**Participation will involve:**

- **Teachers discussing the relative success of activities and after each Mandarin lesson.**

- **Teachers being invited to participate in interviews to obtain their views about the use of activities and games at the end of the research.**

Participation in this study is voluntary. There will be no adverse consequences for those who wish not to participate and / or those who withdraw participation after giving consent to be in the study. The information provided in this study will only be available to the researcher in this study. All published information will only be reported in group form that does not identify individuals or school. You can tell other people about this study by providing them with the researcher’s contact details. If you would like more information about the project please feel free to contact the researcher.
If you consent to participating in the study please complete the attached form and return it to the researcher. I do hope you are interested in participating in this program.

Yours sincerely,

Yi Chen  
Master of Education (Honours)  
School of Education,  
University of Western Sydney,  
Locked Bag 1797, Penrith South DC, NSW 1797, Australia.  
Telephone: 0415340152; Email: 16836004@student.uws.edu.au

The researcher conducting this study is: Yi Chen, Master of Education (Honours) student, School of Education, University of Western Sydney. Please contact Yi Chen (Telephone: 0415340152; Email: 16836004@student.uws.edu.au) if you have any questions about this study.
Appendix 4  Consent forms

Locked Bag 1797
Penrith South DC NSW 1797 Australia

College of Arts
School of Education

Consent Form for Parents / Carer and Students (Experimental Classes)

Research Project: Assessment for Learning: Enhancing activities to learn Mandarin

Chief Investigators
Yi Chen, Telephone: 0415340152; Email: 16836004@student.uws.edu.au

I acknowledge that:

- I have read the Parent / Carer Information Sheet.
- I have discussed participation in the project with my child and my child agrees to participate in the project.
- I understand that my child’s participation in this project is voluntary and they are free to withdraw their participation at any time.

Please TICK Yes if you consent, TICK No if you do not consent to each of the statements below:

1. I give permission for my child to participate in the study by completing a survey and achievement tests on 3 occasions
   Yes     No

2. I give permission for my child to participate in a group discussion if requested
   Yes     No

Parent’s / Carer’s name .................................................................(please print)

Parent’s / Carer’s signature .......................................................Date

...............
Consent Form for Parents / Carer and Students (Control Classes)

Research Project: Assessment for Learning: Enhancing activities to learn Mandarin

Chief Investigator
Yi Chen, Telephone: 0415340152; Email: 16836004@student.uws.edu.au

I acknowledge that:
- I have read the Parent / Carer Information Sheet.
- I have discussed participation in the project with my child and my child agrees to participate in the project.
- I understand that my child’s participation in this project is voluntary and they are free to withdraw their participation at any time.

Please TICK Yes if you consent, TICK No if you do not consent to each of the statements below:

1. I give permission for my child to participate in the study by completing a survey and achievement tests on 3 occasions

   Yes     No

Parent’s / Carer’s name ………………………………………………………………...(please print)

Parent’s / Carer’s signature ……………………………………………..Date

…………
Consent Form for Teachers (Experimental Classes)

Research Project: Assessment for Learning: Enhancing activities to learn Mandarin

Chief Investigator
Yi Chen, Telephone: 0415340152; Email: 16836004@student.uws.edu.au

I acknowledge that:
- I have read the Teacher’s Information Sheet.
- I understand that participation in this project is voluntary and I can withdraw my participation at any time.
- I understand that my involvement is confidential.
- I understand that group discussions will be audio recorded.

Please TICK Yes if you consent, No if you do not consent.

I consent to participate in the study.
Yes  No

Teacher’s name ………………………………………………………………………...(please print)
Teacher’s signature …………………………………………………….Date …………..
Consent Form for Teachers (Control Classes)

Research Project: Assessment for Learning: Enhancing activities to learn Mandarin

Chief Investigator
Yi Chen, Telephone: 0415340152; Email: 16836004@student.uws.edu.au

I acknowledge that:
- I have read the Teacher’s Information Sheet.
- I understand that participation in this project is voluntary and I can withdraw my participation at any time.
- I understand that my involvement is confidential.
- I understand that group discussions will be audio recorded.

Please TICK Yes if you consent, No if you do not consent.

I consent to participate in the study.
Yes  No

Teacher’s name ………………………………………………...(please print)
Teacher’s signature ……………………………………………..Date ……………
Appendix 5    Interview schedules

Locked Bag 1797
Penrith South DC NSW 1797 Australia

College of Arts
School of Education

Interview Schedule for Teachers (Experimental Classes)

Research Project: Assessment for Learning: Enhancing activities to learn Mandarin

NAME OF APPLICANT:

POSITION TITLE:

INTERVIEW TIME & DATE:

INTERVIEWER:

Guideline Questions

1. What do you think about the use of activities and games as a strategy for teaching Mandarin?

The interview dialogue will encourage the teacher to talk about what they think about activities and games as a strategy to interest and motivate students. They will also be encouraged to provide examples to illustrate what they say.

2. Can you tell me about your impressions of what students thought about learning Mandarin?

The interview dialogue will encourage the teacher to talk about what the students thought about learning Mandarin. Additional dialogue will try to illicit examples to illustrate what is said.

3. Do you think students learnt Mandarin in an efficient and effective way?

The interview dialogue will focus on the efficiency and effectiveness of the teaching strategies used. Teachers will be encouraged to provide illustrations and examples.
4. Can you talk about the use of activities and games as a way of promoting students learning Mandarin? Why do you think this? Can you please give reasons for your answers?

The dialogue will focus on the specific use of activities and games as a strategy to promote learning. An emphasis will be placed on trying to illicit reasons for responses.

5. What do you think of the practice of embedding assessment in lessons?

The focus of this question will be about using embedded assessment as a component of lessons.

6. Can you talk about embedded assessment and its ability to promote student learning? Can you please give reasons for your answer?

The emphasis of this question will be on the ability of embedded assessment to promote learning. An emphasis will also be placed on reasons for views expressed.

7. Can you tell me about one Mandarin lesson that you can remember very clearly?

The purpose of this question is to find out what impressed or did not impress the teacher. It serves as a way of triangulating other answers and providing a way for the teacher to talk about aspects of the Mandarin lessons that have not been covered.

8. Do you have any comments to make?

This question provides a chance for the teacher to add any additional information or make their own comments on the Mandarin lessons.
Interview Schedule for Teachers (Control Classes)

Research Project: Assessment for Learning: Enhancing activities to learn Mandarin

NAME OF APPLICANT: ________________________________________________

POSITION TITLE: __________________________________________________

INTERVIEW TIME & DATE: ___________________________________________

INTERVIEWER: ____________________________________________________

Guideline Questions

1. What do you think about the use of activities and games as a strategy for teaching Mandarin?
   The interview dialogue will encourage the teacher to talk about what they think about activities and games as a strategy to interest and motivate students. They will also be encouraged to provide examples to illustrate what they say.

2. Can you tell me about your impressions of what students thought about learning Mandarin?
   The interview dialogue will encourage the teacher to talk about what the students thought about learning Mandarin. Additional dialogue will try to illicit examples to illustrate what is said.

3. Do you think students learnt Mandarin in an efficient and effective way?
   The interview dialogue will focus on the efficiency and effectiveness of the teaching strategies used. Teachers will be encouraged to provide illustrations and examples.
4. Can you talk about the use of activities and games as a way of promoting students learning Mandarin? Why do you think this? Can you please give reasons for your answers?

The dialogue will focus on the specific use of activities and games as a strategy to promote learning. An emphasis will be placed on trying to illicit reasons for responses.

5. Can you tell me about one Mandarin lesson that you can remember very clearly?

The purpose of this question is to find out what impressed or did not impress the teacher. It serves as a way of triangulating other answers and providing a way for the teacher to talk about aspects of the Mandarin lessons that have not been covered.

6. Do you have any comments to make?

This question provides a chance for the teacher to add any additional information or make their own comments on the Mandarin lessons.
Interview Schedule for Students (Experimental Classes)

Research Project: Assessment for Learning: Enhancing activities to learn Mandarin

<table>
<thead>
<tr>
<th>NAME OF APPLICANT:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>POSITION TITLE:</td>
<td></td>
</tr>
<tr>
<td>INTERVIEW TIME &amp; DATE:</td>
<td></td>
</tr>
<tr>
<td>INTERVIEWER:</td>
<td></td>
</tr>
</tbody>
</table>

Guideline Questions

1. What do you think about Mandarin lessons?
   This is a very general question to obtain the student’s overall impression of Mandarin lessons. The student will be encouraged to illustrate their answers with examples.

2. What do you think about the activities and games used in Mandarin lessons?
   This question will focus on the activities and games used in the Mandarin lessons. Additional dialogue will be used to illicit illustrations and examples.

3. Did you enjoy the activities and games?
   This question will focus on student interest and enjoyment of the activities and games. Additional dialogue will be used to illicit illustrations and examples.

4. Tell me about how much you learnt in Mandarin lessons?
   This question focuses on what the student learnt in Mandarin lessons. Additional dialogue will be used to illicit illustrations and examples.
5. Do you think the activities and games helped you to learn Mandarin? Can you please tell me why you thought that?
This question focuses on how much the activities and games contributed to student learning in Mandarin lessons. Additional dialogue will be used to illicit reasons for student answers.

6. What do you think about assessment being included in the lessons?
This question focuses on assessment as part of the Mandarin lessons. Additional dialogue will be used to illicit illustrations and examples.

7. Do you feel that you were being assessed while you were being taught Mandarin?
The focus of this question is to find out if the student was aware that they were being assessed while they were participating in the activities and games. Additional dialogue will be used to illicit illustrations and examples.

8. Did the assessment in the lessons give you an idea of how well you were learning Mandarin?
The focus of this question is to find out if the student thought the assessment in the lesson provided feedback that enabled them to determine how well they were learning Mandarin. Additional dialogue will be used to illicit illustrations and examples.

9. Did the assessment in the lessons help you learn Mandarin? Why do you think that?
The focus of this question was to find out if the student thought that assessment that was part of the lesson helped them learn. Additional dialogue will be used to illicit reasons for student answers.

10. Can you tell me about one Mandarin lesson that you can remember very clearly?
The purpose of this question is to find out what impressed or did not impress the student. It serves as a way of triangulating other answers and providing a way for
the student to talk about aspects of the Mandarin lessons that have not been covered.
Interview Schedule for Students (Control Classes)

Research Project: Assessment for Learning: Enhancing activities to learn Mandarin

NAME OF APPLICANT: 

POSITION TITLE: 

INTERVIEW TIME & DATE: 

INTERVIEWER: 

Guideline Questions

1. What do you think about Mandarin lessons?
   This is a very general question to obtain the student’s overall impression of Mandarin lessons? The student will be encouraged to illustrate their answers with examples.

2. What do you think about the activities and games used in Mandarin lessons?
   This question will focus on the activities and games used in the Mandarin lessons. Additional dialogue will be used to illicit illustrations and examples.

3. Did you enjoy the activities and games?
   This question will focus on student interest and enjoyment of the activities and games. Additional dialogue will be used to illicit illustrations and examples.

4. Tell me about how much you learnt in Mandarin lessons?
   This question focuses on what the student learnt in Mandarin lessons. Additional dialogue will be used to illicit illustrations and examples.
5. Do you think the activities and games helped you to learn Mandarin? Can you please tell me why you thought that?
This question focuses on how much the activities and games contributed to student learning in Mandarin lessons. Additional dialogue will be used to illicit reasons for student answers.

6. Can you tell me about one Mandarin lesson that you can remember very clearly?
The purpose of this question is to find out what impressed or did not impress the student. It serves as a way of triangulating other answers and providing a way for the student to talk about aspects of the Mandarin lessons that have not been covered.
Appendix 6   Ethics Committee approval

From: "Kay Buckley" K.BUCKLEY@uws.edu.au
To: "Kevin Watson" K.Watson@uws.edu.au,16836004@student.uws.edu.au
Sent: Mon 08/02/10 5:58 PM
Subject: Fwd: HREC Approval H7707

Notification of Approval

8 February 2010

Email on behalf of the UWS Human Research Ethics Committee

Dear Kevin and Yi Chen

I'm writing to advise you that the Human Research Ethics Committee has agreed to approve the project.

NEAF 6.5.3 The consent from the principal is not required, but permission to approach teachers is required to ensure no coercion in place. The initial contact with the students requires involvement of a 3rd person, e. another teacher, or the supervisor etc.

TITLE Assessment for Learning: Enhancing activities to learn Mandarin

H7707 Student: Yi Chen (Supervisor: Kevin Watson)

The Protocol Number for this project is H7707. Please ensure that this number is quoted in all relevant correspondence and on all information sheets, consent forms and other project documentation.

Please note the following:
1) The approval will expire on 30 January 2011. If you require an extension of approval beyond this period, please ensure that you notify the Human Ethics Officer humanethics@uws.edu.au prior to this date.
2) Please ensure that you notify the Human Ethics Officer of any future change to the research methodology, recruitment procedure, set of participants or research team.
3) If anything unexpected should occur while carrying out the research, please submit an Adverse Event Form to the Human Ethics Officer. This can be found at http://www.uws.edu.au/research/researchers/ethics/human_ethics/human_ethics_adverse_eventend_of_project_report
4) Once the project has been completed, a report on its ethical aspects must be submitted to the Human Ethics Officer. This can also be found at http://www.uws.edu.au/research/researchers/ethics/human_ethics/human_ethics_adverse_eventend_of_project_report

Finally, please contact the Human Ethics Officer, Kay Buckley on (02) 4736 0883 or at k.buckley@uws.edu.au if you require any further information.
The Committee wishes you well with your research.
Yours sincerely
Associate Professor Janette Perz,
Chair, Human Research Ethics Committee

Kay Buckley
Human Ethics Officer
University of Western Sydney
Locked Bag 1797, Penrith Sth DC NSW 1797
Tel: 02 47 360 883
Appendix 7  SERAP approval letter

Miss Yi Chen
School of Education
University of Western Sydney
Locked Bag 1797
PENRITH NSW 1797

SERAP number: 2009205

Dear Miss Chen

I refer to your application to conduct in NSW government schools (Western Sydney Region) a research project entitled Assessment for Learning: Enhancing activities to learn Mandarin.

I am pleased to inform you that your application has been approved and that you may now contact the Principals of the nominated schools to seek their participation.

Your approval will remain valid until 31 December 2010.

You should include a copy of this letter with the documents you send to the schools.

I draw your attention to the following requirements for all researchers in NSW government schools:

- School Principals have the right to withdraw the school from the study at any time.
- The approval of the Principal for the specific method of gathering data must also be sought.
- The privacy of the school and the students is to be protected.
- The participation of teachers and students must be voluntary and must be at the school’s convenience.
- Any proposal to publish the outcomes of the study should be discussed with the research Approvals Officer before publication proceeds.

Yours sincerely

Kerrie Ikin
School Education Director, The Hills
Western Sydney Region Education Research Manager
16 March 2010
## Lesson Plan 1

**Date:** 08-06-2010  
**Time:** 14:25 – 14:55  
**Grade:** Year 2/3  
**Topic:** Describe a classmate

<table>
<thead>
<tr>
<th><strong>Outcomes</strong></th>
<th>Students will have:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• observed a classmate and described them;</td>
</tr>
<tr>
<td></td>
<td>• described a classmate’s face in terms of size; and</td>
</tr>
<tr>
<td></td>
<td>• used colours to describe a classmate’s face.</td>
</tr>
</tbody>
</table>

| **Materials** | Classmate description worksheet. The worksheet focuses on five questions: (1) the size of eyes; (2) the size of the nose; (3) the size of the mouth; (4) the colour of the hair; and (5) the colour of the eyes. Each question has four choices, written in pīn yīn, from which students can select an answer. |

| **Introduction** | Review of size words such as big and small. Show pictures of four men and have students observe the size of some of their body parts. |

| **Presentation** | 1. Ask students what the size of the various body parts are and ask them to discuss them.  
2. The teacher then states the size of body parts, in Mandarin, using the sentence that the students are going to learn.  
3. Have students guess the meaning of the Mandarin sentence and explain the sentence structure. |

| **Practice** | Show students several characteristic pictures and have them describe them. |

| **Activity** | 1. Students choose a classmate and describe them with the help of the worksheet. Students should not tell anyone else who they describe.  
2. Students read their descriptions to their partners who then guesses who is being described.  
3. Students read their own descriptions to other students and the teacher who can also guess which student is being described. |
Continuous Assessment

1. Select seven students.
2. The teacher pretends she is a player as well when students read the descriptions and guess who is being described.
3. The teacher points out incorrect pronunciations to remind students of the correct pronunciations.
4. Students then correct their pronunciations.
5. Discuss with students how they can describe the body parts in other ways.

Closure

Students give their description worksheets to the person who they describe.

Lesson Evaluation

This lesson had ups and downs. Students behaved well at first. However, in the middle of the lesson, some students began to clean the table and make noises. Students loved this activity. They were curious about this activity and asked many questions. The teacher provided clear explanations. The students were very careful when they were describing another student. The assessment showed that most of the selected students had difficulty in pronouncing xiǎo and some had problem pronouncing tō. Therefore, the two pronunciations were emphasised again and eventually all students were able to pronounce them well.

Lesson Plan 2

Date: 15-06-2010
Time: 13:55 – 14:25
Grade: Year 4
Topic: Ordering food and drinks

Outcomes

Students will have:
- ask what people would like to have to eat in a restaurant;
- order food and drinks in Mandarin;
- write a dialogue about ordering food and drinks in a restaurant using Mandarin with the help of prompt cards; and
- understand Chinese ordering conventions and manners.

Materials

Prompt cards with Mandarin clues.

Introduction

Review the words related to food and drink. Give students a scenario that they go to a Chinese restaurant and a waiter presents them with a menu.

Presentation

4. Build the scenario by asking and answering questions in Mandarin. Have students use their knowledge to guess the meaning of what is being said.
5. Explain the sentence structure.
<table>
<thead>
<tr>
<th>Practice</th>
<th>Show students different pictures about food and drink so that they can ask and answer accordingly.</th>
</tr>
</thead>
</table>
| Activity | 4. Review greetings and thank you in Mandarin.  
5. Students work in pairs to put the prompt cards in the right order to form a dialogue about ordering food and drinks in a restaurant.  
6. Students practice the dialogue by playing waiter and customer.  
   Waiter (W): 你好！  
   Customer (C): 你好！  
   W: 你要什么？  
   C: 我要_________。  
   W: 你还要什么？  
   C: 我还要_________。 还: also; else.  
   C: 谢谢！  
   W: 不用谢！  
   C: 再见！  
   W: 再见！ |
| Continuous Assessment | 1. Check how students use the prompt cards to form a dialogue.  
2. While checking, listen to students read the prompt cards and give them feedback.  
3. Discuss with students how and why they developed the dialogue.  
4. Select the students who have been given feedback to act-out the dialogue.  
5. Determine if students have made any improvements and tell them about specific improvements they have made. |
| Closure | Have students share their dialogue with peers. |
| Evaluation | This lesson went very well. Students responded to the teacher during the entire lesson. Students liked this activity. They liked to place the cards in the right order as well acting-out the dialogue. There were many opportunities for assessment. Both the students and the teacher had fruitful conversations. However, if the lesson were longer, students could have spent more time on placing the cards in the right order to improve the quality of the role play. |