

**Digital Storytelling for Non-Background Learners of Chinese:  
A Case Study of a Primary School in Australia**

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Bachelor of Arts (Teaching Chinese as Foreign Language)

(Beijing International Studies University, 2016)

A thesis submitted in fulfilment of the requirements for the research higher degree of  
*Master of Philosophy*

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March 2018

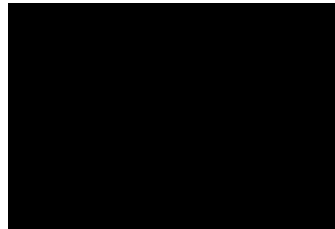
## **Declaration**

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 Information derived from the published or unpublished work of others has been acknowledged in the text and a list of references is given.

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**Ningning FU**

**March 2018**



## Acknowledgements

Throughout the process of undertaking this postgraduate study, I have received a great deal of expertise, advice, guidance, encouragement, and support from my supervisors, colleagues, teachers at the research site, education departments in New South Wales and Ningbo, as well as from my family and friends. Without their help, I would not be able to complete this thesis. It is to them that I wish to express my gratitude.

First, I want to express my sincere gratitude to my Principal Supervisor, Dr. Lynde Tan, for her significant support and huge amount of guidance and encouragement throughout the progressive stages of this thesis. With her thoughtful supervision and pastoral care, I was well-prepared to teach and research at the same time. If not for her unwavering support and dedication, I would not be able to complete my thesis. I am indeed very fortunate to have her as my supervisor. Words alone are simply insufficient to thank her for all that I have gained from her.

Second, my sincere gratitude goes to my Associate Supervisor, Dr. Jinghe Han, for her timely assistance in solving problems that emerged during my research and teaching. She helped me with daily life problems without any complaints. Thanks to her help, my life in Australia has proved enjoyable.

Third, I want to thank all my colleagues in the Research Oriented School Engaged Teacher–researcher Education (ROSETE) research team, who were always there, to help me address problems in the research process. In addition, I want to thank Pam Firth (Detail Devil Editing Services) who provided professional copyediting and formatting services according to the guidelines laid out in the university-endorsed national *Guidelines for Editing Research Theses* (Institute of Professional Editors, 2010).

Fourth, I wish to express my appreciation of the teachers at my research site for their effective guidance in managing the class and unconditional support for the conduct of my

research in the school. Further, I would like to thank the three organisations who supported this unique international cooperative program: the Ningbo Municipal Education Bureau, the New South Wales Department of Education, and Western Sydney University.

Finally, I want to convey my gratitude to my family and friends. They have always encouraged me and appreciated what I do. When I encountered difficulties in Australia, they consoled me and helped me to achieve my goals. Thanks to their support and encouragement, I have gained the courage to pursue the things I want to do for my future.

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## **List of Abbreviations**

ACARA	Australian Curriculum, Assessment and Reporting Authority
CFL	Chinese as a foreign language
CI	Confucius Institute
DST	digital storytelling
HREC	Human Research Ethics Committee
ICT	information and communication technology
IPA	International Phonetic Alphabet
LOTE	language other than English
NALSAS	National Asian Languages and Studies in Australian Schools
NPL	National Policy on Languages
NSW	New South Wales
NSW DoE	New South Wales Department of Education
NMEB	Ningbo Municipal Education Bureau
PPT	PowerPoint
ROSETE	Research Oriented School Engaged Teacher–researcher Education
SERAP	State Education Research Applications Process
UK	United Kingdom
US	United States
WSU	Western Sydney University

## Abstract

With the proliferation of technology, digital storytelling has become a popular strategy used in the second language learning classroom. Despite its widely cited benefits, digital storytelling is not common in the context of teaching and learning Chinese as a foreign language. Adopting a case study methodology, this study aimed to examine the affordances and challenges of using digital storytelling to teach Chinese to non-background learners in an Australian primary school where Chinese language lessons were incorporated into its school curriculum. It also aimed to explore the scaffolding strategies needed to make Chinese learnable when non-background learners created digital stories to develop Chinese language skills. The study involved 32 Year 6 students (aged 11 to 12), and it employed a qualitative approach to analyse the data collected over a school term, which consisted of field notes from participant observations, transcripts of focus group discussion, and students' artefacts.

I argue that digital storytelling was beneficial to the non-background learners, primarily in the retention of Chinese vocabulary and engaging them in the language learning process. Nevertheless, two key challenges were evident when digital storytelling was used to teach Chinese to the non-background learners. There was an overemphasis on technical aspects of the creating of digital stories given the limited ICT competency of the learners. Additionally, the linguistic characteristics of Chinese language created high levels of difficulty for the non-background learners to create digital stories entirely in Chinese. Given the challenges in adopting digital storytelling, appropriate scaffolding strategies were judiciously and reflectively developed to enable the non-background learners to use Chinese to create digital stories. The study showed that appropriate levels of scaffolds had to be progressively introduced; social scaffolding was the dominant type of scaffold that was viable, which included timely encouragement and prompting, sequential modelling and imitation, distancing, direction, and concurrent modelling and imitation.

The findings of the study contribute to an understanding of how digital storytelling can be an innovative strategy for the teaching and learning of Chinese as a foreign language. It shows that teaching Chinese to non-background learners does not necessarily have to adopt the traditional approach of using rote learning. The research presented is one of the pioneering studies that experiment with technology to promote a more student-centred approach when teaching Chinese to non-background learners in Australia.

## **CHAPTER 1:**

### **The Background and Context of the Study**

#### **1.1 Introduction**

This study explored the instruction of Chinese as a foreign language (CFL) using digital storytelling (DST) in an Australian context. In this chapter, I first present the background and context of the study, including a review of Chinese language education in Australia and the gap in related studies. It is followed by the purpose of the study where I illustrate the aims and a brief introduction to my research questions. The significance of the study and its potential contribution are then discussed. Finally, I provide an outline of the organisation of the thesis.

#### **1.2 Global Interest in Teaching and Learning Chinese as a Foreign Language**

Chinese language teaching has a long history, and it continues to be a global trend (Tsung & Cruickshank, 2013). According to Tsung and Cruickshank (2013), teaching Chinese to foreigners can be traced back to the Tang dynasty in the seventh to the ninth centuries. Currently, China's economic power is changing global attitudes towards Chinese language. As a result, the 21st century has witnessed an expansion in Chinese language learning, whereby more and more foreigners are learning Chinese as a second or foreign language. Xia and Guo (2012) estimate that the number of students studying Chinese worldwide is over 400 million. In the UK, in 2006, an independent school made Chinese one of their compulsory subjects of study. In addition, 400–500 secondary schools in the UK offer CFL classes (Zhao & Huang, 2010). In the United States (US), Chinese, a long-neglected 'less-common' language, was brought to the spotlight in the 21st century as a language essential to the nation's security and prosperity (Xiao, 2013); a statistic shows that 1,000 schools in the US offer CFL lessons (Zhao & Huang, 2010). In Hong Kong, a survey aiming to understand South Asian students' attitudes towards Chinese language showed that the majority of the students attempted to learn Chinese particularly for the purposes of career development and further education access (Shum, Gao,

Tsung, & Ki, 2011). To cite the example of Australia, by 2008, there were about 84,000 students studying Chinese in more than 300 schools (Orton, 2008). With the worldwide interest in teaching and learning Chinese in mind, this study was particularly interested in the teaching and learning of CFL in the Australian context.

As the popularity of learning Chinese becomes worldwide, the past decade has seen the establishment of an abundance of Chinese programs. Hanban is one of them. To provide support for the teaching of CFL in countries outside of China, the Office of Chinese Language Council International (the Office), which is also known as Hanban, sets up a number of overseas Confucius Institutes (CIs). A CI is often established in an overseas university, and a partnership is made between a university in China and the participating overseas university to maintain and promote Chinese language teaching and Chinese cultural programs (Zhao & Huang, 2010). By 2012, the number of CIs has reached 400 in over 100 countries (Xia & Guo, 2012). In Australia, Hartig (2015) claimed that there are currently 13 CIs and about 35 Confucius classrooms nationwide. According to the official document from the Office, Hanban sends thousands of volunteer Chinese teachers to others countries every year to undertake Chinese language education in foreign contexts (Xing, 2006). By 2014, Hanban has sent over 30,000 volunteers to more than 120 countries (Moloney & Xu, 2015).

In addition to Hanban, there are a number of organisations and programs initiated by China and other countries to promote the teaching and learning of CFL globally. The Research Oriented School Engaged Teacher–researcher Education (ROSETE) program is part of the Australia–China partnership. It is a collaborative research program administered through a partnership agreement between Western Sydney University (WSU), the NSW Department of Education (NSW DoE), and the Ningbo Municipal Education Bureau (NMEB) in China. It provides postgraduate students from China with the opportunity to combine their academic research work with practical teaching experience to equip them for a successful career in the

education industry. Each volunteer teacher has a mentor teacher in the school where they teach Chinese to guide them in their teaching process. ROSETE students are also required to undertake research to improve their practice. As a teacher–researcher in the ROSETE program, I conducted this study with the aim of contributing to ‘making Chinese learnable’ (Singh & Han, 2014) to non-background learners in the Australian context. Singh and Han’s (2014) concept of ‘making Chinese learnable’ (p. 403) refers to the achievement of three interrelated educational aims, namely,

1. using learners’ recurring everyday sociolinguistic activities undertaken in English to teach the same activities in Chinese, capitalizing of cross-sociolinguistic similarities;
2. creating successful and rewarding language learning experiences for learners through using resourceful and innovative teaching/learning strategies that maximise time on practicing Chinese in their everyday lives; and
3. creating supportive learning environments involving school principals, teachers and parents, to build the desire of learners to continue learning Chinese, about modern twenty first century China, and making person-to-person relations with Chinese people. (pp. 404–405)

### **1.2.1 Review of Chinese language education in Australia**

Australia is, geographically, close to Asia. Its increasing interaction with Asian neighbours has resulted in the establishment of special ties with Asian countries in terms of immigration, economy, education, and other sociocultural activities (Chen & Zhang, 2014). Consequently, Australia’s policy on Asian languages has been formulated to cater for economic growth, as economic globalisation has made the Australian government realise that increasingly, its economy had been relying on its Asian neighbours more than its traditional European trading partners (Chen & Zhang, 2014).

As an English-speaking country, the geographic location of which is in the Asia–Pacific region, a phenomenon unique to Australia is its progressive policies to promote Asian languages, Chinese in particular (Chen & Zhang, 2014). Phrases such as “engagement with

Asia” and “Asia literacy” can be easily found in official statements. Orton (2008) outlined the importance of developing Australia’s relationship with China by listing its significant roles for Australia. For instance, China is Australia’s largest trading partner, a major source of immigrant workforce and international students for Australia, a major source of tourists to Australia, and a major destination for Australian tourists. These aspects determine that the increasingly close connection between Australia and China is inevitable.

Australian government’s Asian language policies are optimistic since Chinese language teaching came to Australia in 1909, when the first Chinese community school was established by community leaders (Chen & Zhang, 2014). In 1987, the National Policy on Languages (NPL) was formed to recommend “a Language Other Than English (LOTE) for all” (NPL, 1987, p. 16). It chose nine languages, including Arabic and Modern Standard Chinese, as representative of LOTE in schools. In 1994, the Council of Australian Governments initiated the National Asian Languages and Studies in Australian Schools (NALSAS) strategy, which reduced the number of languages for the purpose of economic development to four key Asian languages: Chinese, Japanese, Indonesian, and Korean. The government provided financial support for the education of these four languages through this strategy. Since the inception of NALSAS, many schools in Sydney have included foreign language teaching and learning in the curriculum under the multiculturalism policy. Subsequently, a continuation of NALSAS was established in 2008. An additional amount of money was devoted to the promotion of Asian languages by Kevin Rudd, the former Australian prime minister who was fluent in speaking Chinese (Chen & Zhang, 2014).

With the establishment of NPL and NALSAS, along with many other Chinese language programs, Chinese language teaching in Australia began to flourish in the 1990s. However, with time, Chinese language teaching in Australia became less promising. By 2015, of the six most-taught languages (Japanese, Italian, French, Indonesian, German, and Chinese) in schools,



Chinese had the smallest number of students (Orton, 2016b). In the same year, nationally only 4,500 candidates in Year 12 were learning Chinese, a 10% drop since 2007 (Orton, 2016b). Several interrelated factors were working together in creating this generally unsatisfactory situation in Chinese language education in Australia.

First, students' and parents' indifference about Chinese and the negative attitude towards Chinese learning posed an obstacle to the success of Chinese language teaching in Australia. Orton (2016b) noted there is much more emphasis on learning English, mathematics, and science than on learning another language. She further claimed that this notion is universal in Australian society. This kind of bias definitely hinders the development of Chinese language education in Australia.

On top of that, a high percentage of Chinese background speakers in Chinese classes makes the students without a Chinese background feel intimidated and threatened, which leads to a high dropout rate at the senior level (Orton, 2010). Moreover, non-background learners of Chinese will quit their study of the language because they know they cannot surpass the children with Chinese-speaking parents in the examination. This worrying condition also causes the difficulty in teaching Chinese in Australia. As advised by Orton (2008), teaching and assessing students who learn the language as a second language separate from those who speak Chinese at home could be regarded as a fair way to solve this problem.

Additionally, the slow progress of learning Chinese is a constant frustrating issue for many second language learners. According to the U.S. Foreign Service Institute, for an English speaker, Chinese is proved to take about 3.5 times longer to learn than a European language (Orton, 2016a). More specifically, to achieve an equivalent level of proficiency in Chinese and French, 2,220 hours are required to learn Chinese while only 600 hours are needed for French. The longer time needed for learning Chinese results from the linguistic characteristics of the language.

Scrimgeour (2013) regarded Chinese language as one of the most difficult second languages to learn from the perspective of users of alphabetic writing systems. He explained this as largely due to the complexity of the Chinese character writing system and the time-consuming process of vocabulary building through reading. Similarly, McLaren and Bettinson (2015) pointed out that the acquisition of characters in Chinese presents particular challenges for students who are learning Chinese as a foreign or additional language. The Chinese characters can be regarded as either ideographic or logographic in nature (Li, 2015), which means people can reckon the meaning of a certain Chinese character by observing the character itself. This is true for most of the characters. However, for some characters, it is impossible to guess the meaning by simply looking at the character because nowadays, Chinese people use simplified characters.

Kane (2006) claimed that Chinese written characters require a longer study time, as the lack of connection between the written character and its pronunciation makes the language difficult to be learnt. McLaren and Bettinson's (2015) study is a case in point: The written character gives few clues as to how it may be pronounced. The correct pronunciation and tone in Chinese needs to be learnt together with the written character. For instance, English language learners only need to memorise the spelling of a word if they want to learn the vocabulary, while Chinese language learners are expected to know the spelling of pinyin, its correct tone, and the order of stroke of the character.

There are also tensions between the cultural modes of teaching and learning in China and Western arena. Despite the proposition to adopt a student-centred approach, Moloney and Xu (2015) argued that many teachers who teach CFL overseas tend to adopt a more teacher-centred approach due to the teaching culture in China. They further argued that such a teaching approach is influenced by the values inherent in the pedagogy for teaching Chinese as a first language. In China, where Chinese is learnt as a first language, textbooks are treated as the

prior source of knowledge, and grammar structures as well as the written language, including its logographic system, are greatly emphasised (Moloney & Xu, 2015). It is cited that with a teacher-centred approach, the teacher controls the pace of the whole class, and students sit on their seats and accept the knowledge passively (Sawant & Rizvi, 2015). A large number of CFL teachers may imitate the teacher-centred teaching style of their teachers, resulting in many CFL teachers adopting a didactic approach in their classroom (Gilakjani, 2012). As Moloney and Xu (2015) pointed out, the didactic approach is problematic in the Western educational backgrounds as it fails to sustain students' learning motivation in language learning.

As pointed out earlier, the teaching of CFL in Western arena is characterised by teacher-centred approaches. Braine (2003) described that the teacher as the authoritative source of knowledge is a distinguishing characteristic of this teaching pedagogy. Other key characteristics include teachers providing instruction in a didactic way and telling students what they should and should not do (Sawant & Rizvi, 2015). However, there are education researchers who argue for the pedagogical value of teacher-centred approaches. For instance, Brown (2003) advocated that teacher-centred approaches place control over learning pace into the hands of the teacher, who uses their expertise in content knowledge to help learners make connections in learning. In addition, for those students who are less motivated, teacher-centred approaches keep them at the same stage as their classmates in the learning process (Pischetola, 2014). While teacher-centred approaches are good for these above listed reasons, some researchers contend that these approaches fail to actively engage students. Critics of teacher-centred approaches argue that learner's own responsibility is neglected in the traditional form of education (Armstrong, 2012). Nowadays, many contemporary learning theorists are advocating student-centred approaches that encourage students to be more inquiry oriented, self-directed, and engaged in learning by drawing on real-world contexts (Brown, Bransford, & Cocking, 2000). By student-centred learning, Cari (2014) explained that students choose not

only what to learn but also how and why. While Cari (2014) gave explanation to student-centred learning, Spooner (2015) pointed out the benefits of it that it helps create interactive group-work activities in which students actively participate in the discovery process of learning while maintaining an autonomous point of view. In this study, I aimed to broaden my repertoire of teaching skills by exploring more student-centred approaches to actively engage students in learning CFL. Although teacher-centred approaches are commonly used in CFL education, I argue that exploring more student-centred approaches in the teaching of CFL is a worthwhile pursuit that has yet to be implemented in many Chinese classes.

### **1.2.2 Digital storytelling in language learning**

In an attempt to implement a student-centred approach in Australia, I tried DST when teaching CFL as a teacher–researcher in the ROSETE program in a primary school located in western Sydney in 2017.

Storytelling has played an important role in the distribution of knowledge and preservation of ancient culture since early civilisation. It is a simple but powerful method to explain complex items. Storytelling and learning are inevitably intertwined because the process of composing a story is also a process of meaning making. Integrating storytelling into academic learning strengthens students' learning ability and accelerates knowledge development (Matthews-DeNatale, 2008). More specifically, storytelling is conducive to language learning. According to Trawick-Smith (2003), storytelling contributes to children's language and literacy acquisition in both speech and listening composition, as well as language development in both reading and writing. Researchers such as Tsou (2012) have advocated that storytelling in teaching and learning an additional language increases the development of language skills and improves understanding and social interaction. Some studies report on the potentials of storytelling for teaching and learning a foreign language. For instance, when teaching Spanish as a foreign language in a high-school context, Castaneda (2013) asserted that

storytelling could act as a feasible approach to achieve meaningful goals for students. In her study, not only did students complete the story, they also practised using the target language in expressive communication and engaged in real-world communication. The studies listed above all confirm that storytelling is beneficial in students' language learning process.

In this digital age, the development of new-media tools offers new possibilities and opportunities for language teaching and learning. Integrating information and communication technology (ICT) into storytelling, DST has increasingly replaced the traditional form of storytelling. Frazel (2010) defined DST as an innovative form of storytelling using multimedia such as image, audio, or video to convey information to an audience in the form of a story. A review of literature shows that DST has inherited the same benefits for language learning as traditional forms of storytelling have (Castaneda, 2013; Ferrer & Miller, 2013; Green, 2013; Hur & Suh, 2012; Miller & Kim, 2015; Papadopoulou & Ioannis, 2010; Ribeiro, 2015; Thang, Mahmud, & Tng, 2015). Furthermore, it has been established that DST allows students to engage with language learning and cultural content while experiencing minimal levels of embarrassment and anxiety (Reyes & Vallone, 2008). (See Chapter 2 for a further review of the potential of DST for Chinese language learning.)

My study was conducted in Ning Ning Primary School (pseudonym), one of the schools that incorporate Chinese language in the school curriculum to students who are keen to learn Chinese as a foreign or additional language. According to the mentor teacher in the school, Chinese language education was initiated as a response to the NALSAS program. Before I started teaching Chinese in Ning Ning Primary school, I had the opportunity to observe the previous ROSETE teacher's Chinese language lessons. However, I had not observed the use of digital stories as a strategy to better engage the students in learning Chinese. Although there were times where more student-centred teaching strategies, such as group discussions, were implemented in the teacher's classes, the dominant approach to teaching Chinese in her classes

was largely teacher-centred. Based on my anecdotal observations and review of literature on DST (see Chapter 2), I found it worthwhile to apply a more student-centred approach, such as DST, in Chinese language teaching in Ning Ning Primary School. These observations constituted my research questions in examining the use of digital stories to teach Chinese to non-background learners as a way to shift CFL education from a teacher-centred approach to a student-centred approach with the aim of making Chinese more learnable to the non-background learners.

### **1.3 Purpose of the Study**

Wertsch (1997) argued that the background, culture, and belief systems of the learner help them to shape and build on the knowledge they encounter in the learning process. This argument supports the student-centred approach, which allows students to draw on their prior knowledge and culture in learning and help them to reconstruct the knowledge stored in their memory (Pritchard, 2013). Adopting a student-centred approach, this study aimed to draw on students' prior knowledge and cultural resources to enhance their learning of Chinese language. DST was a perfect fit as it allows students to make use of the vocabulary they have already acquired to create the stories they intend to tell.

As a volunteer Chinese teacher of the ROSETE program, I taught weekly Chinese lessons to students in Ning Ning Primary School in Western Sydney from January 2017 to December 2017. In this research, I conducted the study with a group of 32 Year 6 students aged between 11 and 12. All the students in my study were learning Chinese as a foreign language and none of their family members spoke Chinese, thus, they could be regarded as non-background learners as researchers have claimed that non-background learners refer to those whose exposure to the target language literally stops at the classroom door (Pasfield-Neofitou, Grant, & Huang, 2015; Singh & Han, 2014). This definition is equal to the notion that students have no access to the target language after class and are unable to use it frequently in their daily

lives. Typically, the only approach they can gain knowledge of the target language is through their language classes in school.

In this study, over eight weeks I assisted students in producing their digital stories in the Chinese language learning process. Applying DST in CFL context helps students learn meaningfully by drawing on their prior knowledge and experiences and gives them the opportunity to speak the language to communicate their ideas. Section 3.3.4 describes the teaching and learning sequences of the implementation of DST in Chinese language lessons in my research in detail.

#### **1.4 Research Questions**

Based on the issues raised in this chapter in the context of teaching CFL in Australia, specifically in Ning Ning Primary School, this study sought to explore the affordances of using DST to teach Chinese to non-background learners in Sydney. In this study, the following research questions were asked:

1. How does digital storytelling afford non-background learners' Chinese language learning?
2. What are the challenges of using digital storytelling to teach non-background learners of Chinese?
3. What scaffolding strategies make Chinese learnable when non-background learners create digital stories to develop their language skills?

#### **1.5 Significance of the Study**

This study aimed to contribute to the teaching of CFL by introducing more student-centred approaches into the Chinese language learning classroom. Specifically, it examined the use of DST to teach Chinese to non-background learners. Abundant studies (Bahrani, 2011; del Puerto & Gamboa, 2009; McLaren & Bettinson, 2015; Papadopoulou & Ioannis, 2010; Sadik, 2008; Xie & Yao, 2008) found that technology offers the potential to encourage students

and motivate learners, and thus enhance students' learning. In my study, I intended to examine the potential of DST as an innovative approach in Chinese language learning.

The study supported Australia's policy on Asian languages and aimed to make Chinese more learnable, in alignment with ROSETE's goals. Specifically, Australia's policy on Asian languages targets the promotion of teaching and learning of four Asian languages (including Chinese), which is beneficial to the economic growth of the country; the ROSETE program reflects the cooperation between Australia and China in facilitating CFL education in Australia. By conducting DST in Chinese language lessons in Ning Ning Primary School, my research was in accordance with Australia's language policy and the objective of the ROSETE program.

In the Australian Curriculum, 'general capabilities' refer to an integrated and interconnected set of knowledge, skills, behaviours, and dispositions that can be developed and applied across the curriculum to help students become successful learners, confident and creative individuals, and active and informed citizens. One of the seven general capabilities mentioned by the Australian Curriculum, Assessment and Reporting Authority (ACARA) is the ICT capability (Australian Curriculum, 2013). Additionally, the NSW syllabus for Chinese encourages students to "be productive, creative and confident in the use of technology and understand the impact of technology on society" (Chinese K-10 Syllabus, p. 5). This study promoted the ICT capability as students engaged in learning Chinese with the aim of developing technology awareness.

## **1.6 Organisation of the Thesis**

This thesis consists of seven chapters. Following this introduction, Chapter 2 reviews the current literature and research that motivated the research questions addressed in this thesis. Chapter 3 depicts the methodological approach adopted in my study. The data collection methods and data analysis methods are also described in this chapter. Key findings from the analysis of different types of data are presented and discussed in Chapters 4 to 6, with each



chapter focusing on the findings of each research question, respectively. Chapter 4 lays emphasis on the affordances of DST in the teaching of CFL, while Chapter 5 pays attention to the challenges of using DST in the teaching of CFL. Chapter 6 stresses the scaffolding strategies required in using DST to make Chinese learnable that help to achieve the affordances put forward in Chapter 4 and assist in addressing the challenges raised in Chapter 5. Chapter 7 summarises the study findings, evaluates the significance of the study, and indicates its limitations.

## **CHAPTER 2:**

### **Literature Review**

#### **2.1 Introduction**

In Chapter 1, I raised the growing concern of researchers that, despite the increasing number of people learning Chinese, the traditional pedagogy of teaching CFL is ineffective in sustaining students' interest and fails to retain a strong enrolment rate in their subsequent learning process (Moloney & Xu, 2015). This worrying situation resonates with Chen and Zhang's (2014) argument that the traditional pedagogic approach, that is, the teacher-centred approach, has failed to achieve the goals of enthusing more people to learn Chinese, reducing the dropout rate in the Chinese class, and enhancing the learning outcome of the Chinese class. This literature review seeks to explore an innovative pedagogy in the teaching and learning of Chinese as a foreign language to alleviate the negative influence brought by the traditional teaching pedagogy.

Following my arguments in Chapter 1 about the need for student-centred approaches in teaching, I first pay attention to how technology can be used for this purpose in Chinese language teaching. As new media is being developed, I then explore the emergence of DST from traditional storytelling and focus on the employment of DST, particularly in foreign language teaching. Finally, the notion of scaffolding is reviewed and its importance in teaching and learning discussed. The chapter concludes with a brief summary of this review.

#### **2.2 Using Technology for Innovative Chinese Language Teaching**

Researchers have pointed out that CFL education can be enhanced only when innovative pedagogical solutions are applied to motivate learners, develop learners' Chinese language skills and reduce the drop-out rate. In recent years, CFL researchers have been advocating for a more student-centred approach in CFL learning environments by putting students at the centre of the learning process and attending more to their needs (Chen and Zhang, 2014; Moloney

and Xu, 2015). Lu and Zhao (2013) observed that CFL education had begun shifting the focus of a classroom activity from the teacher to the students with greater emphasis on equipping students to be more engaged in the learning process by constructing knowledge themselves.

The advantages of applying student-centred approaches are mentioned by many researchers such as increasing students' motivation, promoting personal interactions, and decreasing disruptive behaviours (Spooner, 2015). Student-centred learning promotes meaningful learning when the learning responsibility lies on students themselves (Jonassen, Peck and Wilson, 1999). In a meaningful learning environment, students actively construct their knowledge by accommodating new ideas into their prior knowledge to make sense of their new understandings (Jonassen, 1995). Not only do western scholars acknowledge the advantages of students-centred learning, the Chinese researchers have also been advocating student-centred approaches in education. Not only do these approaches motivate Chinese learners, they have been found to be effective in enhancing academic achievements in Chinese learning (Lu and Li, 2008).

Currently, with the proliferation of technology, many researchers are investigating the roles of technology in promoting student-centred learning in language learning context. For instance, researchers have attested to the use of technology to promote interactive communications in language classes as a strategy to enhance students' language learning ability (Bahrani, 2011; del Puerto & Gamboa, 2009; Wang, Sierra, & Folger, 2003). Similarly, Garrett (2009) suggested that computer-assisted language learning can better enhance the learning process by increasing learners' engagement with authentic materials and promoting more social communication. These researchers have highlighted some prominent roles technology has played in engaging learners in the language learning process.

When learners are engaging with technology, they become both consumers and producers of texts or content in their own learning process (Castell, 2000; Tan and Zammit, 2016). In

other words, students do not only “absorb” given knowledge, but also create new knowledge in the learning process. As a result, the products are usually used by learners to represent their ideas and understandings of what they have learnt in a more multimodal way. The content created is often shared for peer review whereby people are invited to give constructive feedback and hence, making learning more meaningful, collaborative, and authentic (Kim, Tan, & Bielaczyc, 2015).

The benefits of using technology are better understood as *affordances*, a term originally proposed by Gibson (1977). Gibson defines affordances as the perceived properties of an object and its inherent ability to help the user achieve certain goals. In Gibson’s definition, there is a strong emphasis on the relationship between the object and the user; it is this relationship that supports the satisfaction of the user’s needs.

As pointed out earlier, technology plays an important role in promoting student-centeredness in language learning context. Therefore, it can be argued that technology has its affordances in language learning classrooms by creating student-centred learning environments. Based on Gibson’s concept, Kirschner, Strijbos, Kreijns and Beers (2004) put forward that education is a combination of three different types of affordances which are interlinked:

1. Technical affordances: the usability of an object.
2. Social affordances: the social interaction promoted by the application of this object.
3. Educational affordances: the characteristics of the object that enact user’s learning behaviour within a given context.

Adopting Kirschner et al. (2004)’s explanation of the three kinds of affordances, Tan and Zammit (2016) explain the notion of affordances in the context of language learning classrooms as such:

1. *Technical affordance*, i.e., the possible tasks that can be done based on the technical features or physical properties of the technology;

2. *Social affordance*, i.e. the possible social interactions that can be fostered amongst the users of the technology;
3. *Educational affordance*, i.e. the possible instruction and learning activities or behaviours that can be enacted. (p. 189)

The educational affordances of technology in the context of CFL education are gaining prominence, namely for promoting student-centred learning. Technology allows teachers and students to gain materials easily from many sources and then remix them to create new multimedia materials in order to cater to students' language learning needs (Xu and Moloney, 2011).

Technology also alleviates the time-consuming processes of grammar and vocabulary learning. Grammar and vocabulary can be more effectively learnt by drawing on the real world contexts (Wong, King, & Chai, 2016). Chinese teachers can take pictures of real objects and surroundings and present them as digital resources to students. In this way, technology strengthens students' understanding of the words by helping them build a connection between newly learnt linguistic knowledge and their daily life experiences.

With technology, students' independent learning can be better supported with little or no assistance from their teachers. Software applications such as e-dictionaries and digital flash cards are useful for Chinese character acquisition, particularly in decreasing learner frustration, stimulating student motivation, and thus, enhancing student learning (McLaren and Bettinson, 2015).

### **2.3 Digital Storytelling in Language Education**

Previously in Chapter 1, I adopted Frazel's (2010) definition of DST as an innovative form of storytelling but with the integration of technology. DST involves "a process that blends media to enrich and enhance the written or spoken word" and allows the learner to "combine, in any number of ways, images, audio, and video to tell a story" (Frazel, 2010, p. 9). Hence, it

can be understood as the practice of combining narratives with digital content, including images, sounds, and videos.

Before a digital story begins, the storyteller needs to think through a topic of his or her own. This topic should be appropriately conveyed to a particular audience, with electronic elements and in the time available. This method forces the learner to consider all aspects of their digital story. A digital story typically begins with a script. In this process, students plan the framework of their own stories, which allows them to draw on their prior experiences. Then the storyteller assembles rich media to support the ideas and emotions in that script. DST also allows learners to share their stories outside the traditional written form and allows them to develop creative presentations utilising a number of skills, including writing, performance, and technology skills. Arguably, DST is grounded on a student-centred learning approach as it facilitates and actively sustains student involvement in their own learning process, which has been proved to produce effective learning outcomes (Dupain & Maguire, 2007).

With the growth of technology in recent years, DST has been applied in classroom teaching globally. Many researchers have provided evidence of DST for enhancing positive outcomes in students' academic learning. After analysing the use of DST for a range of subjects in primary, secondary and college settings, Gils (2005) categorised the advantages of DST for improving the quality of teaching and learning as follows: (1) making explanations of language uses more compelling; (2) creating real-world situations in an easy and affordable method; (3) improving the engagement of students in the process of learning; and (4) offering diverse interactive learning systems (pp. 5–6).

Gils's (2005) argument has been supported by other researchers. For instance, Sauve (2005) suggested that educational motivation can be inspired by students' personal desire to tell stories. To put it simply, a student will learn more expressions and sentence structures in a language learning classroom if they have a personal story to share with others. Building on

Sauve's (2005) argument, Yang and Wu (2012) pointed out that DST promotes student-centred learning by encouraging learner autonomy and enhancing learners' critical thinking and language skill development.

Honing language skills has been the primary educational affordance of DST (Jakes & Brennan, 2006; Robin, 2008). By producing and narrating personal stories, young learners can easily gain a better understanding of content knowledge and develop language skills in the process of writing, revising, practising, and narrating their stories (Wang & Zhan, 2010). Nevertheless, DST has proven to be effective in developing other skills such as creativity, innovative thinking and communication skills (Ohler, 2008) as well as high-level information literacy (Farmer, 2004), interpersonal skills, technology literacy skills (Thang et al., 2014) and teamwork (Thang, Mahmud and Tng, 2015).

Sadik (2008) argued that the DST projects implemented by teachers supported students' understanding of specific content in an academic course. According to Sadik, DST allows students to draw on their prior knowledge and cultural resources as valuable resources for learning and helps them produce digital artefacts that are meaningful to them. Ohler (2008) pointed out that a "story provides a powerful metaphor, framework and set of practical processes for resolving issues, educating ourselves and pursuing our goals" (p. 9). This means that storytelling can help students reflect on the past and plan for the future. It allows learners to (re)construct knowledge by drawing on their prior knowledge and experience, which is different from the traditional teacher-centred approaches. Because DST is a user-generated media, it provides students with learning opportunities to cater to their own individual interests and learning styles and learning is therefore meaningful and authentic (Ribeiro, 2015).

When DST is used to make learning meaningful, learners are more actively involved in the process of constructing knowledge and are able to apply the newly learnt knowledge to their daily experiences (Miller and Kim, 2015). By making digital stories from one's own

experiences, a learner becomes an active creator of his or her knowledge rather than a passive receiver of knowledge (Hur and Suh, 2012; Ohler, 2008). In other words, learners are more engaged in language learning when they are involved in creating digital stories.

I find Chapman's (2003) three types of engagement useful in understanding the affordances of DST. Chapman classified engagement into three types, namely: *cognitive investment, active participation, and emotional engagement*. According to Chapman, the term cognitive investment refers to the extent to which students attend to and expend mental effort in a learning task. It can also be understood as knowledge and skills students gain from the learning process. The use of DST for promoting meaningful learning and multiple skills can be argued as examples of cognitive investment. As described by Chapman (2003), the term active participation refers to the participants playing an active role in relevant discussions with teachers or peers and actively responding to an instructional learning task. This is evident when researchers report about learners being highly involved as a text producer when they engage in creating digital stories. Chapman (2003) defines emotional engagement as a type of engagement that occurs when there are high levels of interest or positive attitudes from the learners. As DST has been reported to be instrumental in motivating learners, it can be argued that emotional engagement increases when learners are involved in creating digital stories. Although many researchers studying the affordances of DST do not refer to Chapman's notion of engagement, the three types of engagement are evident in the reported literature on DST.

While many educational researchers (Castaneda, 2013; Ferrer & Miller, 2013; Green, 2013; Hur & Suh, 2012; Miller & Kim, 2015; Papadopoulou & Ioannis, 2010; Ribeiro, 2015) have examined the potential of DST as an innovative and effective approach in English or Spanish language learning, less is known about its effectiveness in CFL contexts (Thang, Mahmud & Tng, 2015; Wang & Zhan, 2010). Advocators of DST for teaching Chinese language argue that DST provides a different learning experience for CFL learners and enables



Chinese language teachers to escape the traditional approach of “chalk and talk” or “repetition and memorisation” which are still very commonly used to teach Chinese (Thang, Mahmud & Tng, 2015). In the context of CFL, Wang and Zhan (2010) recommended that students should be given the opportunity to select topics of their own interest for their digital stories, but they are required to practise using a range of recently learnt Chinese vocabulary and sentence structures in the stories. They further argued that students should be encouraged to explore new words and structures by themselves to compose a meaningful and coherent story, creating a tight connection between the real world and language learning. The literature review in DST suggests that further research is needed to examine ways of promoting DST in teaching non-background learners Chinese, particularly in Australia.

#### **2.4 Use of Scaffolding Strategies in Language Learning**

Most of the studies mentioned previously have emphasised the involvement of learners, however, they have not highlighted the supporting roles of teachers. To ensure students’ high levels of engagement in student-centred learning approaches, the responsibility for learning should be given to the students but teachers are also required to play appropriate roles in providing minimal supervision or assistance to the students. In a technology-integrated classroom, the use of technology does not make teachers obsolete (Ohler, 2008). Instead, teachers become more important than ever because students need guidance and assistance from them to help them use the technology with care and develop a coherent digital story. In the context of language learning, students “do not automatically progress in their foreign language learning. It is a process that needs to be carefully oriented and scaffolded by the teacher” (Jones, 2001, p. 75).

Wood, Bruner, and Ross (1976) introduced the concept of “scaffolding” as a metaphor to describe the way an expert tutor (such as a parent or a teacher) supports a young child’s progress and achievement in a relatively demanding task. Building on Wood et al. (1976)’s

notion of scaffolding, Bruner (1978) particularly emphasised the cognitive support given by teachers in the scaffolding process to help learners solve tasks that they would not be able to solve by working on their own. Like Bruner, Bickhard's (1992) notion of scaffolding pays attention to the informative or coordinated supportive behaviours from one or more person being applied for the benefit of an infant or child. Bickhard (1992) explained that scaffolding reduces the complexities of a task and breaks it down into manageable pieces that the novice has the possibility to solve. From this perspective, the importance of scaffolding in the learning process cannot be undermined as it leads to the acquisition of a certain skill, the improvement of a certain capability, or the settlement of a certain problem. Therefore, it is essential for teachers to find out effective scaffolding strategies in the teaching and learning sequences, particularly when DST is explored as an innovative method to teach Chinese to non-background learners.

Maybin, Mercer and Stierer (1992) identified two criteria for determining whether a particular example of help could be categorised as a scaffold, namely: (1) there must be evidence of a learner having successfully completed the task with the teacher's help and (2) there must be evidence of the learner having achieved a greater level of independent competence as a result of the experience. These two aspects focus on the teacher's help in the task-completing process and the learner's achievement of independent ability in the task-completing process. These two criteria distinguish scaffolding from common help or support. Therefore, not all support or help from an expert individual can be portrayed as scaffolding. Gibbons (2015) clearly specified the two main features of scaffolding: essential and temporary. The latter particularly differentiates scaffolding from normal help or support. As the aim of scaffolding is for learners to solve a demanding task alone after the teacher's cognitive support, scaffolding thus becomes temporary.

In section 2.3, I presented the literature review on the use of DST for language learning. Many of these studies focus only on the positive influences of DST and only two research studies conducted by Gils (2005) and Wang and Zhan (2010) have mentioned the challenges of employing DST in language learning process. Gils (2005) raised the concern that the entertainment aspect of DST might surpassed the educational aspect. Thus, he suggested that DST projects should “be developed in close collaboration with teachers to create a good balance between entertainment and education” (Gils, 2005, p. 6) While Gils notes the significance of achieving a balance between entertainment and education, in Wang and Zhan’s (2010) study, they presented the problems related to learners’ inexperience with technology, such as fuzzy images in the story and incorrect file format. These two studies necessitate the importance of teachers’ scaffolding strategies in guiding non-background learners in using DST for learning Chinese in the CFL contexts.

In my study, I drew on Mascolo’s (2005) levels of scaffolding to identify the scaffolding strategies that have assisted my students in producing their own digital stories. Mascolo (2005) thinks of scaffolding as coactive, that is, it is understand as “any process outside of an individual’s direct control that functions to direct individual action toward novel or higher-order forms” (p. 185). This definition differentiates from traditional scaffolding in that the personal environment system becomes the primary unit of developmental analysis. According to Mascolo, there are three broad categories of coactive scaffolding: (1) *social scaffolding*; (2) *ecological scaffolding*; and (3) *self-scaffolding*.

Social scaffolding is “the processes by which co-regulated exchanges with other persons’ direct development in novel directions” (Mascolo, 2005, p. 189). This definition is the same as the traditional notion of scaffolding, which emphasises the help provided by a more expert individual to a less expert learner in the learning process (Bruner, 1978). Nevertheless, Mascolo identified how help was rendered in the form of social exchanges at seven levels (refer to Table

2.1). These seven levels differ only in the degree of support provided by the expert individual to the novice.

Table 2.1. *Levels of Co-Regulated Interaction and Support (Mascolo, 2005, p. 188).*

Increasing levels of social scaffolding with CS1 as the lowest level	Levels of social scaffolding
CS1	Encouragement and praise
CS2	Sequential modelling and imitation
CS3	Asymmetrical assistance
CS4	Distancing
CS5	Direction
CS6	Concurrent modelling and imitation
CS7	Guided modelling and imitation

Ecological scaffolding refers to “the ways in which one’s relation to or position within the broader physical and social ecology moves action toward novel forms” (Mascolo, 2005, p. 190). This kind of scaffolding focuses on the support provided by the environment, while social scaffolding focuses on the interaction between expert and novice. There are three types of ecological scaffolding as identified by Mascolo (2005): (1) naturalistic scaffolding, i.e. “the use of naturally occurring environmental features in their unaltered state to aid in acting” (p. 190); (2) positional scaffolding, i.e. “the ways in which an individual’s physical position or orientation in relation to a task, object or social context functions to organize, direct, or make an action easier to perform” (p. 191); and (3) task/object scaffolding, i.e. “the ways in which the task itself or the objects of action structure the construction of novel ways of acting and thinking” (p. 192).

Mascolo (2005) used self-scaffolding to refer to “the ways in which products of the individual’s own actions create conditions that direct and support the production of novel forms of action and meaning” (p. 193). He further breaks down self-scaffolding into four types: (1) cognitive self-scaffolding “when an individual performs actions that directly or

indirectly change the environment in ways that suggest new meanings or cognitive operations” (p. 193); (2) bridging, i.e. “the process by which individuals use partial knowledge to construct a target structure that helps bridge the gap between old knowledge and developing knowledge” (p. 193); (3) analogical mappings when “a person draws upon existing representations of similar problems as an analogical guide to structure novel problem-solving activity” (p. 194) and (4) coaction, scaffolding and development where by “fine-grained moment-by-moment assessments of coactions among elements of the person–environment system in real time” are made (p. 195).

## **2.5 Summary of the Chapter**

In this chapter, I have presented the literature review on the importance of changing from teacher-centred approaches to student-centred approaches in CFL education. I have drawn on relevant literature to support the argument that technology, particularly the use of technology for DST, can facilitate this shift. I have reviewed the integration of technology particularly in CFL contexts, the application of DST for language learning, as well as the scaffolding strategies recommended to support student learning. The key educational affordances of DST in education can be classified in the following four aspects: increasing learner motivation, promoting meaningful learning, enhancing classroom engagement and developing language and other skills. However, the review also shows that DST has not been widely discussed as an innovative strategy to teach Chinese to promote student-centred approaches in CFL contexts. My study aimed to make contribution to the understanding of effective Chinese teaching methodology, particularly in the context of applying DST to promote student-centred learning in CFL education. In Chapter 3, I present how I carried out the DST project in detail. The research methodology employed in the study is demonstrated along with the data collection and data analysis methods in the next chapter.

## **CHAPTER 3:**

### **Research Methodology**

#### **3.1 Introduction**

In this chapter, I first introduce the choice of methodological approach and research design that best suited my study to examine the research questions put forward in Chapter 1. A case study methodology was selected to arrive at answers to my three research inquiries. Following on from Chapter 1, I provide details of the research context along with the teaching and learning sequences of my study. I also elucidate the specific methods of data collection, namely, participant observation, focus group discussion, and students' artefacts, followed by an illustration of methods used for data analysis. A description of how I achieved trustworthiness and validity of my research methods is also included in this chapter. In addition, ethical considerations referred to in the research process are clarified. The chapter concludes with a brief summary of sections.

#### **3.2 Case Study Methodology**

As a pragmatic, flexible research approach, case study has the capability to provide comprehensive in-depth understanding of a diverse range of issues (Harrison, Birks, Franklin, & Mills, 2017). In this research, a case study methodology was adopted to pursue my three research inquiries in the context of teaching CFL to primary school students in Australia. Harrison et al. (2017) pointed out that case study is an effective methodology to investigate and understand complex issues in real-world settings. They further recommended that case study designs are suitable to address a wide range of research questions across a number of disciplines, particular the social sciences, education, business, law, and health. Grounded in an educational context, case study methodology is a recommended methodology, and in this section, I argue for its fit to explore the potential of DST as a pedagogical tool in CFL education.

Merriam (1988) defined case study as “a basic design that can accommodate a variety of disciplinary perspectives, as well as philosophical perspectives on the nature of research itself” (p. 5). Moreover, she included the purpose of the study and the products of the research when defining case study as “an in-depth description and analysis of a bounded system” (Merriam, 2009, p. 4). My study was based on purposive sampling because of the context of my study, and a case study methodology was suitable for investigation of the qualitative data I collected. As case study can address questions such as the why, what, and how of an issue, I selected this method because the research questions of my study began with “how” and “what”.

Merriam (2009) emphasised the importance of defining a case in research. They noted that cases are selected based on the research purpose and question; the aim of the case is to provide a holistic description that assists the settlement of research questions. In this study, there was only one case, the Year 6 class, as I only conducted the DST project with them. The reason for choosing Year 6 as my case is listed in the section 3.3 (refer to section 3.3.2).

Case study approaches are powerful forms of qualitative research. “With the capacity to tailor approaches, case study designs can address a wide range of questions and assist researchers to explore, explain, describe, evaluate, and theorise about complex issues in context” (Harrison et al., 2017, p. 10). Furthermore, the outcomes of case study can lead to “an in-depth understanding of behaviours, process, practice, and relationships in context” (Harrison et al., 2017, p. 10). With the aim of gaining an in-depth understanding of the three research questions related to DST in the CFL classroom, I selected case study for my research.

### **3.3 Research Design**

In this section, I describe the research context in detail, including the research site and research participants. I then present the design and implementation of the DST project, which shaped the teaching and learning sequences of my research.

### **3.3.1 Research site**

The primary school where I conducted my DST project is called Ning Ning Public School (pseudonym). It is located in the Western Sydney region of New South Wales, with a history of 150 years. Ning Ning Public School is a member of the ROSETE program (see Chapter 1) and it accepts one volunteer teacher from China each year to give Chinese lessons in the school. In Ning Ning Public School, only Year 5 and Year 6 students have Chinese language lessons, and each student is required to learn Chinese for two years. As a volunteer Chinese teacher, I taught Year 5 and Year 6 students Chinese once a week from January 2017 to December 2017 with the attendance of the mentor teacher in each lesson. The language lesson was on Wednesday afternoon and each lesson lasted 45 minutes.

### **3.3.2 Research participants**

There were 32 participants in my research, and they were non-background learners (refer to the definition of non-background in Chapter 1) of Chinese aged 11 to 12. The students who took part in this DST project comprised Year 6 students from Ning Ning Public School. I included only Year 6 in my research because they had been learning Chinese for one year, and they were expected to have a basic knowledge of Chinese pinyin. The previous Chinese teacher told me that she had taught them some basic expressions in Chinese that related to greetings, body parts, and the Chinese Spring Festival. The Year 6 students were assessed by the mentor teacher to be ready for creating digital stories as part of their Chinese language learning lessons. According to the mentor teacher in school, Year 6 students were familiar with PPT as they had used it in other classes, but they had only acquired elementary skills in making PPT presentations due to limited technology in the school.

### **3.3.3 Design and implementation of the digital storytelling project**

DST is rapidly proliferating around the world, probably due to its unique characteristics. Digital stories thrive through the internet, whether in personal webpages and blogs, social



networks (such as Facebook), or even in specific digital story sites (such as Storify, Storybook, and so on) (Ribeiro, 2015). Meanwhile, there is a wide variety of DST forms that range from the personal to the public, from educational to entertainment. Some digital stories are video based; others are based on photos and others on cartoons (Ribeiro, 2015). In the context of my research, I wanted the students to focus more on language use when creating the digital stories. Hence, I judiciously chose a technological tool (PPT) that they were already familiar with, rather than have them learn a new digital tool.

Digital stories can be produced individually, in small groups, and as a whole class. Personal stories, such as personal and biographical stories, are good for individual DST projects, whereas documentary reports and problem-solving-based learning projects, such as community infrastructure projects, can be done as a whole class (Frazel, 2010). In the circumstance of my study, each student was learning to use Chinese at a different pace; hence, an individual digital story was more suitable to cater to the varying learning needs. Moreover, individual digital stories provided more students with the opportunity to personalise their stories, as the aim of this DST project was to encourage students to take responsibility of their Chinese language learning process by giving them the opportunity to design, create, and present their own digital stories in class. Individual digital stories also make Chinese learning more meaningful. Furthermore, in recognition of the fact that Year 6 students only had one Chinese lesson each week, and they had limited time to produce digital stories in class, this DST project was designed to allow students to make digital stories individually, which was more convenient for them to finish the stories after class at home.

Ohler (2008) recommended the following steps to start storytelling: (1) Find the story core that is meaningful and leads to improvement or progress in your life; (2) draw the story map and add some details to the story core; (3) turn to technology and add music and images to the story. Considering that my participants were all primary school students, with limited

time with me in producing the digital stories, I had to modify the recommendations to fit the context of teaching Chinese to my target research participants. Before I conducted the DST project, I sought advice from the mentor teacher to make a suitable timetable for the participants. In consultation with her, we reached an agreement that the students would create a story of no more than 50 words in Chinese, create 5–10 PPT slides, and add some images but no music. Meanwhile, participants were to recite their stories, with no written words in their final digital stories (PPT slides), which meant only images and students' own voices would be on the slides. This was a pedagogical decision, as teachers had to shift students from the spoken mode to the written mode in learning an additional language (Hertzberg, 2016). This was to ensure that students did not feel overwhelmed in practising using the newly learnt vocabulary to support the diverse learning needs of the students. Scaffolding strategies are usually recommended, such as using planning sheets, storyboards, and so on. In my design, these forms of scaffolding were needed to guide the students in the process of making digital stories.

Goggins, Spielholz, and Nothstein (2008) suggested that it is possible to include interventions when adopting case study methodology. In my case, implementing digital stories was my intervention. The intervention was intended to make connections between students' Chinese language learning and their lives to make Chinese more learnable to them as non-background learners. The challenges of Chinese vocabulary learning would be addressed by the intervention. Although there were 10 teaching weeks in each term, I had only eight weekly lessons in Term 3 that each lasted 45 minutes to implement digital stories in my lessons. This was due to varying reasons related to school activities. However, before the Year 6 students began to make digital stories in Term 3, they had practised making digital stories in Term 2 (24 April to 30 June), which made them more familiar with the process of making digital stories. That meant the students had been creating digital stories for 16 weeks, but my research only focused on the latter eight weeks.

My research cycle began in Week 4 of Term 3 (9 August 2017). In the first week of my research cycle, the concept of DST was reintroduced to the students by using examples created by the teacher and some students of the class in the practice period (Term 2). I also gave out planning sheets (refer to Appendix 1) to allow students to write first drafts of their stories. At the end of this class, students had decided the themes of their new digital stories and handed in the first drafts.

In the following week of my research cycle (Week 6, 23 August 2017), participants submitted the storyboards (refer to Appendix 2) for their stories. This process was important, as Ribeiro (2015) stated it is necessary to convert a draft story into a short, concise, and tellable story. Herman (2009) defined tellability as “that which makes an event or configuration of events (relevantly) reportable—that is, tellable or narratable—in a given communicative situation” (p. 135). This storyboarding process helped develop students’ critical thinking skills, as they had to choose the sentences that conveyed the main idea of their stories.

In Week 7 (30 August 2017), the research participants began to add Chinese to their storyboards. They were expected to tell their digital stories in Chinese, but towards this goal, I allowed them to code mix (use English when they did not know the Chinese expression) when needed. In these instances, I would teach them how to express themselves in Chinese based on the English words they had written in their storyboards. As the students had insufficient vocabulary size of Chinese language, after they handed in their storyboards in the previous week, my work was to make a vocabulary list of the basic expressions of Chinese used in daily life that related to students’ stories (see Table 3.1). In class, students chose the words and phrases that they could use in their stories and wrote them down on their storyboards. After this lesson, I asked students to hand in their weekly reflection forms, on which they wrote the words and phrases they did not know. I made a new vocabulary list after looking through all

the students' reflection forms and hung the newly made vocabulary list (refer to Appendix 3) in the classroom for students to practice when I was not at school.

Table 3.1. *Basic Expressions of Chinese Used in Daily Life.*

	English	Pinyin and Characters
General structure (new)	I like . . . because . . .	wǒ xǐ huān . . . yīn wèi . . . 我喜欢 . . . 因为 . . .
Sport (learnt in Term 1)	Two ways of “play”	dǎ / tī 打 / 踢
	I play . . . with . . .	wǒ hé . . . yī qǐ wán . . . 我和 . . . 一起玩 . . .
	soccer/ rugby/ basketball/ tennis	zú qiú 足球 / gǎn lǎn qiú 橄榄球 lán qiú 篮球 / wǎng qiú 网球
Trip (learnt in Term 2)	I went to . . .	wǒ qù le . . . 我去了 . . .
	The weather there is . . .	nà lǐ tiān qì . . . 那里天气 . . .
	I brought . . .	wǒ dài le . . . 我带了 . . .
	I visited . . .	wǒ cān guān le . . . 我参观了 . . .
Family (new)	There are . . . people in my family.	wǒ jiā yǒu . . . kǒu rén 我家有 . . . 口人。
	father/ mother/ sister/ brother	bà bà 爸爸 / mā mā 妈妈 jiě jiě 姐姐 / mèi mèi 妹妹 gē gē 哥哥 / dì dì 弟弟
	His/her name is . . .	tā jiào . . . 他/她叫 . . .
	pet	chǒng wù 宠物

Before Week 8's (6 September 2017) class, I recorded myself reading the students' stories and sent the audios to students to allow them a better understanding of the pronunciation. Additionally, I prepared a small piece of paper (stripe) for each participant based on their own stories with both English and Chinese (including pinyin and characters) on it. This stripe was for them to refer to when they wrote pinyin and characters in their storyboards. In Week 8, students began to make PPT slides for their digital stories. They had to insert the images they wanted to present into the slides. After class, participants were encouraged to practice pinyin by listening to the audios they received.

Week 9 (13 September 2017) was a challenging week. Students had to finish the PPT-making process after they recorded their own voices in the slides. This voiceover procedure was essential because the process itself had proven to be revealing (Lambert, 2013). Voiceover established a connection between the storyteller and the story, allowing the memories of the event described in the story to emerge as the script was recorded. Voice was able to convey feelings, determine the basic mood of the story, and even change the way the visual images were perceived. Hull and Nelson (2005) were of the same opinion, remarking that the voice is crucial as a means of expression and identification, especially for youth. Therefore, in my study, I required my research participants to record their own voices in digital stories. In addition, students had the opportunity to revise their digital stories after seeing their classmates' digital story drafts. In the revising stage, students again learnt to view their work with a critical eye. Digital stories, just like short poetry, should include only what is important (Miller & Kim, 2015). Thus, creating a story and revising it is useful in developing critical thinking skills. I had a one-to-one conference with each student to help with their pinyin pronunciation and character writing.

During the presentation process (Week 10, 20 September 2017), although the participants had already recorded their voices in the slides, they still needed to speak out their scripts during their presentation at my request. This was because the technology was only a tool of expression; it could not replace the role people played in the DST project. Lambert (2013) confirmed this argument, that DST sustains “the human-to-human, face-to-face communication as the central means of our exchange, while media assists and amplifies our ideas in a complimentary context” (p. 17). The DST project in my study aimed to be an interactive process in a specific social context. Thus, simply playing the audios in the slides was opposite to this communicative objective. In the assessment stage (along with the presentation process in Week 10), the emphasis was on whether the theme of the story was meaningful, whether the voice pace and

images fit the story context, and whether the details were enough to build up the story and the duration of the storytelling presentation. The reasons for the design of the assessment sheet (refer to Appendix 4) were as follows:

- Students' critical thinking ability was embodied in the themes of their stories.
- The voice cadence and style could be used as additional meaning-making elements of the story, which was important in presenting the digital story.
- The choice of image and details included could reflect the effectiveness of my scaffolding strategies. (Adapted from Green, 2013)

Table 3.2. *Schedule for Creating Digital Stories in Term 3, 2017.*

Week	Teaching Topic/Activity
Weeks 1 & 3	Students finish their digital stories in the practice period.
Week 4	<ol style="list-style-type: none"> <li>1. Review how to make digital stories (the first step: initial script).</li> <li>2. Present my own planning sheet and some students' planning sheets from the practice period to the class.</li> <li>3. Students decide the themes of their stories and finish the new planning sheet.</li> </ol>
Week 6	<ol style="list-style-type: none"> <li>1. Review how to organise a story (the second step: storyboard).</li> <li>2. Present my own storyboard and some students' storyboards from the practice period to the class.</li> <li>3. Students decide the pictures and the sentences (select from their initial scripts) they want to present in their final digital stories.</li> </ol>
Week 7	Teach the vocabulary and sentence structures that relate to the themes of the stories (plan a trip, the characteristics of a person, sport, etc.).
Week 8	<ol style="list-style-type: none"> <li>1. Assist students to complete their Chinese version of the storyboards (the stripes with pinyin, characters, and English).</li> <li>2. Record my own voice and send it to students for them to practice at home.</li> <li>3. Students begin to make PPT slides for their stories.</li> </ol>
Week 9	<ol style="list-style-type: none"> <li>1. Help students in pinyin pronunciation and character writing (one-to-one conference).</li> <li>2. Students finish their PPT slides and prepare for the presentation.</li> </ol>
Week 10	<p>Presentation of the digital stories.</p> <p>Assessment of the digital stories.</p>

### 3.4 Data Collection

According to Merriam (1998), researchers should confirm their data collection methods and data analysis methods once their research questions have been decided. They should also have a good understanding of what kind of information is useful to address the research questions and what is the most effective way to obtain that information (Merriam, 1988). Methods commonly used in case study include observations, interviews, focus groups, and document and artefact analysis to reach the aim of co-constructing data (Merriam, 2009). When the researcher adopts case study methodology to investigate aspects of second language learning, data such as students' academic results, reflections, and their perspectives in the interview are often collected to analyse the language learning outcome as well as the teacher's field notes (Wong & Looi, 2010). Students' artefacts are also valuable data in case studies of

students' Chinese language learning. Thang, Mahmud and Tng (2015) conducted a case study of using DST to enhance the teaching and learning of Chinese language in a learning CFL context in Malaysia. In their study, they collected students' artefacts such as students' short descriptions of their digital stories, their learning experiences in the DST project, and their final digital stories. They claimed that these data are useful to analyse students' language skills and learning motivation.

Following the common practice in data collection in case study methodology, I incorporated multiple data collection methods, including participant observation, focus group discussion, and artefacts from students. I also involved my research participants in writing weekly reflections with the aim of investigating their perspectives about the weekly Chinese language lesson. Figure 3.1 shows the types of data I collected and analysed.



<b>Time Frame</b>	July to September 2017	18 October, 2017	09 August, 2017	13 September, 2017	20 September, 2017	July to September 2017
<b>Data Collection Methods</b>	Participant observations	Focus group discussion	Students' artefacts			Students' weekly reflection
<b>Types &amp; Amount of Data Collected</b>	8 field notes of the lessons observed	1 focus group discussion with 5 participants (18-minute long)	32 planning sheets	32 storyboards (code mix)	32 final digital stories (PowerPoint format)	32 reflection forms

<b>RQ1</b>	How does digital storytelling afford non-background learners' Chinese language learning?
<b>RQ2</b>	What are the challenges of using digital storytelling to teach non-background learners of Chinese?
<b>RQ3</b>	What scaffolding strategies make Chinese learnable when non-background learners create digital stories to develop their language skills?

Figure 3.1. Types of data collected and analysed.

### 3.4.1 Participant observation

As Merriam (1988) noted, participant observation is a commonly used approach for collecting data in a case study. It gives firsthand information of the situation in the research context. As a teacher, I was able to be a participant observer.

I conducted participant observation once a week based on my teaching schedule. Each participant observation lasted for 45 minutes. Merriam and Tisdell (2015) clarified that what

to observe is determined mostly by the researcher's purpose in conducting the study. Thus, the researcher can plan to focus on observing certain events, behaviours, or persons before the observation. With the three research questions in mind, I decided to concentrate on the activities and interactions in class, as well as the nonverbal behaviours (such as facial expressions) of participants.

During my observations, because I had asked students to make digital stories individually, I needed to walk around the classroom to get a clear view of what each of my research participants was doing in the Chinese lesson and how they organised their time in making the digital stories. The participant observations took place from July 2017 to September 2017, and my emphases were on (1) whether DST facilitated students in their Chinese language learning process and whether they could express their ideas clearly in their final presentations of their digital stories; (2) the challenges or difficulties students encountered when they were making their stories in the Chinese language lesson, and (3) the scaffolding strategies that assisted students to develop their language skills, according to my research questions. Resulting from the lack of video recording and audio recording, I could only take sketchy notes during lesson time and waited until afterwards to record in detail what had been observed.

After the observation, what is written down during the period of observation becomes the raw data from which the researcher can draw out the study's findings (Merriam & Tisdell, 2015). This written form of observation constitutes field notes. The field notes should be highly descriptive and reflective, as researchers should include their comments in field notes to move themselves from describing to analysing. Merriam (1988) pointed out that even if the researcher has the chance to take a few notes during an observation, it is necessary that full field notes be written or typed as soon after the observation as possible. Following Merriam's recommendation, I typed out more complete field notes by including the phases of the lesson and expressing my own and students' words in complete sentences immediately after each

observation. Inevitably, some parts of the field notes needed reorganisation as the format must allow the researcher to find the desired information easily (Merriam & Tisdell, 2015), but it did not affect the content of the data collected. My field notes included the interaction between me and the students while they were producing digital stories and my interpretations or comments. I also underlined the challenges students encountered and put them into my field notes.

However, I could only note down the visible elements in the classroom, for instance, students' behaviours during lesson time. I was not able to observe students' thoughts and perspectives through the participant observation. In addition, field notes cannot reach students' out-of-school activities, especially when they continued to create their digital stories at home as homework. Furthermore, although students' perspectives of DST could be inferred from their conversations, they were not often accessible through participant observation. Most of the interaction in my field notes was between me and students. I could hardly jot down their conversations with their peers in class. Therefore, I needed other data collection methods to help me overcome these limitations of participant observation.

### **3.4.2 Focus group discussion**

Brinkmann and Kvale (2015) noted that a research interview is “a conversation that has a structure and a purpose” (p. 5). In addition, participant observation is often combined with interview to achieve the goal of a comprehensive interpretation of the case study. However, there are two main differences between the participant observation and the interview: (1) the environment—the interview often happens in a settled environment while participant observation occurs in a natural way; and (2) the type of data—researchers can gain firsthand data from observation, but through interview, only second-hand experience can be gathered (Taylor, Bogdan, & De Vault, 2015). The most common form of interview is the one-to-one conversation, where the interviewer elicits information from the interviewee. However, this

kind of encounter did not suit my context because I did not have enough time to conduct individual interviews with all 32 participants in my research. However, interviewing was necessary when I wanted to “observe” feelings and perspectives; thus, I instead chose focus group discussion to obtain the information related to my research questions.

A focus group discussion is an interview on a topic with a group of people who have knowledge of the topic (Merriam & Tisdell, 2015). In this kind of setting, the participants can hear each other’s responses and provide additional comments that they might not have made individually (Carter, Bryant-Lukosius, DiCenso, Blythe, & Neville, 2014); meanwhile, the participants might refine their own views after listening to others’ thoughts (Hennink, 2014). Therefore, focus group discussion is often more productive than individual interview (Carter et al., 2014). Since the focus group discussion encourages participants to not only express their own ideas, but also respond to other members’ perspectives, the group’s composition and the group discussion should be carefully planned to create a non-intimidating environment, so that participants feel free to talk openly and give honest opinions.

Interest in focus group discussion has grown in recent years, and so as the awareness of it as a valuable and effective method of qualitative data collection (Colucci, 2007). Refer to my points above, focus group discussions enable researchers to “observe” the invisible elements of their case study. As participant observation has its own limitations, the group discussion allows researchers to find out those things they cannot directly observe, for instance, participants’ feelings, thoughts, and intentions and their behaviour after the classroom observation. All this information should be gathered by asking questions and letting students express their own ideas freely (Patton, 2002). Another issue worth mentioning is that the purpose of the interview is not to put things in someone else’s mind, but rather to access the perspectives of the person participating in the group discussion (Patton, 2002). As an

interviewer, I was not allowed to reinforce my personal thoughts in the participant's mind, and the only thing I could do was to take down their perspectives and feelings trustworthily.

The focus group discussion is a useful technique for talking in a purposeful way with a select group of respondents to gain insight into educational effectiveness (Lederman, 1990). Lederman (1990) further suggested the number of participants should not exceed eight. In my study, I conducted one focus group discussion after the DST project was finished. Following Lederman's suggestion, I selected five students from Year 6 to participate in the focus group discussion with me. The discussion lasted about 20 minutes and was audio-recorded. This participation was voluntary, and my role was the same as the interviewer in the group interviews. As suggested by Colucci (2007), it is more suitable for the researcher to have all the questions (refer to Appendix 5) planned before the discussion. The questions were selected to fill in the data gap after I had initially coded the participant observation. Additionally, the questions were created following Patton's (2002) suggestion; he recommended six types of question to do with experience and behaviour, opinion and values, feelings, knowledge, sensory, and background. Consequently, in my question list, I included the former four types of question.

During the implementation of focus group discussion, as Merriam (1988) pointed out, the interviewer-interviewee interaction is complex; participants might be reluctant to share their true thoughts with me as we only met once a week. Therefore, the focus group discussion could put my research participants more at ease with me and were more willing to talk as their classmates were with them during the discussion. However, as all participants were primary school students, I let them talk about themselves and their study at first, rather than going straight to the purpose at the very beginning, to reduce their uneasiness and tension. After the warm-up process, the planned questions were shown to the participants.

After the focus group discussion, the audio recording needed to be transcribed to create a script similar to field notes. However, the focus group discussion also had its limitations. Some respondents might not want to share their feelings in front of their classmates. Thus, I needed participant observation to go with the focus group discussion to obtain the firsthand information and to explore students' authentic perceptions that they may not have been willing to share with me during the discussion.

### **3.4.3 Students' artefacts**

Documents and artefacts are also sources of data in qualitative research, in addition to observation and interview (Merriam & Tisdell, 2015). Merriam (1988) claimed that personal documents are a reliable source of data that indicates a person's attitudes, beliefs, and views of the world. At the beginning of this section, I mentioned that Thang, Mahmud and Tng (2015), who conducted a case study using DST, collected students' artefacts such as short descriptions of their digital stories, their learning experiences in the DST project, and their final digital stories. These artefacts assisted the analysis of students' language skills and learning motivation. Inspired by this research, I also collected students' artefacts in my study. There were two types of artefact in my research: students' digital stories and students' weekly reflection.

#### ***3.4.3.1 Students' digital stories***

In my study, students' draft digital stories could be categorised as research-generated documents (Merriam & Tisdell, 2015). There were three kinds of draft stories collected. The first kind of artefact consisted of the planning sheets, which included students' initial scripts of their stories. The second kind of artefact referred to the storyboards. The third kind of artefact was the digital story composed by each target research participant. Students' draft stories in my study could be regarded as personal documents, which could also be analysed as a research data source (Merriam, 1988). In my case study, by studying the three types of digital story

produced by the research participants, I could examine the affordances and infer the challenges of the DST project. Examining their draft stories also provided feedback on my scaffolding strategies. I compared the three types of artefact to trace how digital stories might have benefitted the students and what challenges students encountered in the process of learning Chinese and in using their newly learnt vocabulary to create digital stories.

Artefact examinations also aid in setting the focus group discussions. Used in this way, the artefacts are elicited texts (Charmaz, 2006). For example, Tan (2013) used artefacts as elicited texts to shape her group interviews to find out participants' perspectives about storyboarding. Following Tan's strategy, I used the artefacts for the focus group discussion to guide the participants through the focus of the group discussion (Jones, Martin-Jones, & Bhatt, 2000) as these elicited texts helped students to remember the stories they had created.

#### ***3.4.3.2 Students' weekly reflections***

According to Merriam and Tisdell (2015), students' weekly reflections refer to the personal documents in which participants wrote down their authentic feelings about the weekly Chinese lesson. Unlike the focus group discussion, these weekly reflections had to be done individually, for group members might affect other members' perspectives. The reflection did not have to be long as it was just a way for students to express their opinions and experiences of learning Chinese using digital stories. As suggested by Wang, Spencer and Xing (2009), writing reflections can help promote metacognition. Table 3.3 shows the guided questions of the weekly reflection. Week 4 (the first week in my research cycle) and Week 10 (the last week in my research cycle) reflection questions were different from the other weeks. This was because I needed to make comparisons between the first week and the last week to infer the affordances and challenges of DST in making Chinese learnable to examine the effectiveness of my scaffolding strategies.

Table 3.3. *The Guided Questions of Weekly Reflection.*

Week	Guided Questions
Week 4	1. Do you think digital storytelling is useful? Tell me why. 2. Do you like to use digital storytelling in Chinese learning? Tell me why.
Weeks 5–9	1. What do you enjoy about the weekly lesson? Which part of the lesson do you not like? Tell me more. 2. Is there something you are interested in but the teacher has not included in the class? Tell me more.
Week 10	1. What do you like about the digital storytelling project? 2. What you do not like about this project?

However, every data collection method has its limitation. Personal documents are highly subjective (Merriam & Tisdell, 2015), which leads to the notion that they are not representative or necessarily reliable, although they do reflect the participants’ perspectives. Thus, I needed to combine personal documents with other data collection methods (participant observation and focus group discussion) to gain a holistic understanding of my case.

Nevertheless, there were still some limitations of my multiple data collection methods. Specifically, due to the lack of technology provision in my research context, I did not have enough audio recording equipment to record the group discourse. Ideally, the audio recordings, together with screen capture, would provide greater insights into the process of creating digital stories and thus, enable me to understand the affordances and difficulties of creating digital stories in the learning Chinese as a foreign language context.

### 3.5 Data Analysis

Merriam and Tisdell (2015) emphasised that “data analysis is the point at which a tolerance for ambiguity is most critical” (p. 201). Section 3.4 explained the data collection methods I employed in the present study. In this section, I discuss how I managed these data and analysed them to avoid ambiguity in my research.

In my research, I was mindful of addressing the affordances, challenges, and difficulties in using DST and the scaffolding strategies that could be employed to help students produce



narrative themes when they wanted to use Chinese to express themselves in digital stories. Although my study was not based on grounded theory, I drew on Charmaz's (2006) coding procedures to help make sense of the data I collected, starting from initial coding to focused coding and eventually to axial coding.

Charmaz (2006) recommended three types of coding in the first phase of qualitative coding: initial coding, namely, word-by-word coding; line-by-line coding; and incident-to-incident coding. However, in my study, I found word-to-word coding did not apply in my context, as it was time consuming and typically suitable to deal with nuanced data. Therefore, I used incident-to-incident coding of my field notes and line-by-line coding of the focus group discussion script.

In incident-to-incident coding, the researcher compares incidents and focuses on the research participants' mundane behaviours (Charmaz, 2006). Thus, this method worked well for coding my field notes as I had written down every visible behaviour. In my study, every activity in class was an incident. I had to select the incidents that contributed to address my three research questions to analyse. My initial coding started with the first field notes from Week 4 (9 August 2017). I coded the field notes immediately after each participant observation by adding my comments in them (mentioned in section 3.4). At this important step, I moved from describing to analysing. Charmaz (2006) explained that with incident-to-incident coding, the researcher is able to make comparisons between incidents to obtain a more comprehensive view of the entire data sets. Consequently, I compared the codes I drew from the second field notes with those from my first notes. I then included the third field notes. Finally, I compared all eight field notes from my research cycle to gain a holistic understanding of my case.

As suggested by Charmaz (2006), line-by-line coding works particularly well with detailed data about fundamental problems that relate to the research questions. Thus, for the analysis of the audio recording from my focus group discussion, I transcribed the recording

first and coded the scripts line-by-line, as the focus group discussion was guided by the questions I had planned. The questions were planned after I had coded the data from participant observation, and I knew that I needed to add some questions aiming to explore participants' perspectives about certain activities (scaffolding approaches) in class. Specifically, I was looking for the responses that indicated the benefits or the difficulties of DST.

Another essential issue in the initial coding is that researchers should take participants' cultural background and experiences into consideration to achieve the goal of insider's perceptions (Charmaz, 2006). In my study, I respected all the responses from students and made a conscious effort not to add my own thoughts and personal judgements into the data I collected from them.

Focused coding was the second major phase of coding in my research. It is a more directed and targeted procedure of coding compared to initial coding (Charmaz, 2006). It means that researchers only have to search for the most significant data that relates to the research questions. In this coding approach, I noted which themes emerged from the participant observation and were found in or were absent from the focus group discussion. It was also in this phase that I cross-examined the interpretations across data sets to get an overall view of my case. This was a necessary phase of coding as I sought to develop repeated and dominant patterns to gain insights of my research inquiries.

The last phase of qualitative coding was axial coding. Charmaz (2006) clarified that axial coding specifies the properties and dimensions of a category, at which point the similar main codes from data become a key category. Axial coding aims at bringing data together and examining the coherence between different types of data (Corbin & Strauss, 2008). In my study, I combined the similar codes in different kinds of data and categorised them into a higher general category according to my research questions.

Although I adopted Charmaz’s coding practices, I found that content analysis was not included in her recommendations. The content analysis method is a useful research technique that assists researchers to clarify the characteristics of the research data (Holsti, 1968). In my study, I relied on content analysis to code the students’ artefacts. Specifically, I was inspecting students’ Chinese language use in their artefacts to find the affordances and challenges of DST in Chinese language lessons and studying what students thought about my scaffolding strategies based on their reflections. Therefore, by analysing the content of students’ weekly reflections, storyboards, and their final digital stories, I could gain understandings about my three research questions.

Table 3.4a, Table 3.4b, and Table 3.4c outline the main codes I drew from multiple types of data that related to my three research questions, respectively. These were the codes developed by the end of the iterative coding processes.

In my coding processes, I started with emerging codes, but by the end of the axial coding, I was able to use existing works by various researchers to categorise the affordances (i.e., types of engagement) and scaffolding strategies. In terms of enhancing engagement in the learning process (refer to Table 3.4a), my codes could be categorised into three types suggested by Chapman (2003). Hence, I used my data to attribute these three types of engagement. Similarly, with scaffolding strategies (refer to Table 3.4b), I started with emerging codes but found work by Mascolo (2005) fitting to categorise and attribute the codes from the different sets of data.

Table 3.4a. *Main Codes Under Research Question 1.*

Key Theme: Educational Affordances
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Key category	Main codes	Participant observation	Focus group discussion	Students' artefacts	Weekly reflection
Retention of Chinese vocabulary	Draw on prior knowledge/ recall the vocabulary they learnt before	*	*	*	*
	Memorise the newly-learnt vocabulary better	*		*	*
Engagement in learning process	Students said they had learnt some words and they could use these words in their stories	*	*	*	*
1. Cognitive					
2. Physical	1. Active in asking questions	*	*		*
3. Emotional	2. Students help with each other (answering the questions/ICT skills)				
	Be more eager to learn Chinese/ favourable opinion of digital storytelling	*	*		*

Table 3.4b. *Main Codes Under Research Question 2.*

Key Theme: Challenges					
Key category	Main codes	Participant observation	Focus group discussion	Students' artefacts	Weekly reflection
Attention to technical aspects	Focus more on technical aspects due to lack of ICT capability/ misuse the functions in PPT	*	*	*	*
Linguistic characteristics	Distinguish four tones: do not know how to pronounce each tone/ no concept of what tone is	*	*	*	*
1. Oral expression					
2. Writing system	Pronouncing consonants and vowels non-existent in English (“q”, “x” & “e” )	*	*	*	*
	Ideographic nature of Chinese language: cannot know the pronunciation by simply looking at the character	*	*		*
	Students do not want to write characters because they are hard and complex	*	*	*	*

Table 3.4c. *Main Codes Under Research Question 3*

Key Theme: Scaffolding Strategies					
Key category	Main codes	Participant observation	Focus group discussion	Students' artefacts	Weekly reflection
CS1: Encouragement and praise	Students do well in pinyin pronunciation after this strategy	*	*	*	*
	Students have progress in character writing after this strategy	*	*	*	*
CS2: Sequential modelling and imitation	Students know the pinyin after I pronounced it	*	*		*
	Students write the character after I wrote the whole character in front of them	*	*	*	*
CS4: Distancing	Asked students the differences and common parts between English and Chinese/ help the learning of vocabulary	*	*		*
	Asked students the consonant, the vowel, and the tone of one certain pinyin; let them combine the three answers	*	*	*	*
CS5: Direction	Students used this way to help their pinyin pronunciation: consonant + vowel + tone	*			*
CS6: Concurrent modelling and imitation	Show the order of strokes to students and let them imitate stroke by stroke	*	*		
Task scaffolding	All the students complete the digital stories; successfully present their stories to their classmates	*		*	

### 3.6 Research Validation and Trustworthiness

Carter et al. (2014) explained that triangulation has been “viewed as a qualitative research strategy to test validity through the convergence of information from different sources” (p. 545).

Triangulation involves the use of different types of data sources and multiple data collection methods in the inspection of a single question or phenomenon (Patton, 2002). Denzin (1978) displayed four types of triangulation: (1) method triangulation; (2) investigator triangulation; (3) theory triangulation; and (4) data source triangulation.

In the context of my research, as I was the only investigator, investigator triangulation could not be realised. However, I was able to achieve the other types of triangulation. The validity of my research was achieved first through method triangulation by applying three complementary data collection methods: participant observation, focus group discussion, and students' artefacts. Second, it was achieved through the analytical power of the case study methodology. I stuck firmly to the preliminary data and only made some grammatical modifications to the data I collected. Third, iterative comparison between data and codes was carried out to ensure the validity of the data analysis process. I made comparisons of the outcomes between different kinds of data to see whether they were consistent with each other. Furthermore, Denzin and Lincoln (2003) argued the importance of member checking to ensure the trustworthiness of the findings, and by trustworthiness, they referred to the consistency between the researcher's understanding of data and participants' preliminary perspectives. I applied member checking in my study to see if I had interpreted the focus group discussion correctly. I shared my preliminary findings with the students in the focus group discussion at the end of the project. During the focus group discussion, I shared my notes taken when they were expressing their ideas and invited them to correct my interpretations of their discussions. In this way, I was able to establish trustworthiness in my study.

### **3.7 Ethical Considerations**

In accordance with the ethical guidelines issued by WSU's Human Research Ethics Committee (HREC), privacy and confidentiality in my research were respected throughout the

research process. I started my research only after I had received approval from HERC and State Education Research Applications Process (SERAP).

Before the study commenced (Week 1, Term 3, 19 July 2017), the Year 6 students at my research site were assured that participation or nonparticipation would not affect in any way their right to take part in the weekly Chinese language lesson. On the same day, they were provided with a participant information sheet (see Appendix 6), which stated the aims of the study, details of the research process, the participants' rights, and the measure to maintain anonymity and confidentiality of the research data, as well as a consent form (see Appendix 7), and they were asked to give these forms to their parents. The participant information sheet highlighted in particular that the participation of the study was voluntary. As the participants in my research were all under 18 years old, their parents had to think about their willingness to let their children participate in this study.

Signed consent forms were obtained from all participants prior to the commencement of the study. All participants had pseudonyms to ensure their identities remained confidential. They were also informed that no identifying information would be included in the study. In addition, all participants were assured that the information they provided would be used in my research only. Furthermore, participants would not be obliged to continue with the study once they decided not to participate, and they could withdraw at any time without giving any reason and without any consequence.

### **3.8 Summary of the Chapter**

In this chapter, I have presented and justified the research methodology used in my study. I have outlined the research design and described the research procedure in detail. With the three research questions in mind, I made a plan of how to conduct the eight-week DST project. I have also clarified what kinds of data needed to support my research inquiry. I collected three types of data: field notes from participant observations, a transcript based on one focus group



discussion, and students' artefacts (including students' weekly reflections). All the data were qualitatively coded and analysed using content analysis.

I have argued the merits and challenges of conducting a case study as a teacher–researcher. Being a participant observer, I was able to observe students' behaviour and interaction in class. However, I could not gain a holistic view of the whole class due to the lack of video recording and audio recording equipment. Thus, I employed multiple data collection methods and member checking to ensure the trustworthiness and validity of the research. In Chapters 4, 5, and 6, I present the findings related to my three research questions based on the codes I developed. I begin in Chapter 4 with the affordances of DST.

## **CHAPTER 4:**

### **The Affordances of Digital Storytelling**

#### **4.1 Introduction**

Chapter 4 is the first of three chapters in which I present my findings on the implementation of DST in a CFL classroom in Australia. In this chapter, I pay attention to the affordances of DST for non-background learners of Chinese as the focus of my study was on the use of DST for Chinese language learning. My data suggests two primary affordances, namely, (1) enhancing the retention of Chinese vocabulary and (2) promoting student engagement in their learning of Chinese. In this chapter, I use illustrative examples to highlight the affordances of DST for the research participants.

#### **4.2 Enhancing the Retention of Chinese Vocabulary**

Since the stories were drawn from students' personal experiences with considerable emotional investment, one of the benefits of DST I observed was that it linked to students' real lives and hence, made language learning meaningful and the use of DST effective for language learning (Godwin-Jones, 2012). The result of meaningful learning was the retention of Chinese vocabulary became easier for non-background learners.

In Week 7, the aim of the Chinese lesson was to add Chinese words to students' storyboards which were first created using English. The participants were asked to familiarise themselves with the key vocabulary and sentence structures related to their stories (see Table 3.1) prior to creating their digital stories. Although the participants were expected to create Chinese digital stories, they were allowed to write English words on their storyboards when they lacked the Chinese vocabulary to express themselves. This provision was deliberate as I did not want their creativity to be stifled due to the lack of Chinese vocabulary.

In that lesson, before I presented the vocabulary list to the students, I asked them if they had any knowledge of the Chinese words that were related to their own stories. According to

my participant observation in that week, a student by the name of Wendy said she knew the Chinese words to describe family members, namely “bà bà (爸爸)” [father] and “mā mā 妈妈” [mother]. She explained to me that Miss Zhu (Wendy’s previous Chinese teacher in the school) had taught her the vocabulary to name family members in Chinese last year. She was able to remember the Chinese words for father and mother because these words were related to her family. In the digital story she was going to create, she wanted to include the Chinese words for younger sister but did not know how to express them. Wendy’s response suggested that students were able to remember Chinese vocabulary better when the words they had learnt before were related to their personal lives.

Triggered by Wendy’s answer, another student by the name of Linda volunteered to answer my question. She recalled “pīng pāng qiú 乒乓球” [table tennis] as her story was about her favourite sport. Linda’s answer was useful to other students as about half of the participants were keen to write about their favourite sports and table tennis was a popular choice amongst the students.

When I continued to ask students about their prior knowledge of Chinese vocabulary that were related to their own stories, another student named Jason, whose story was about going to the Blue Mountains with his family, said to me: “*I still remember the sentence ‘wǒ xiǎng qù 我想去’ [I want to go to.....]*”. He further explained that he did not know the Chinese words for the Blue Mountains, but he thought he could use this sentence in his story. After hearing all the responses from students, I began to focus on teaching the vocabulary list useful to the participants’ digital stories.

In the subsequent week (Week 8), in order to check whether students could remember the vocabulary they acquired in the previous week, I had followed up with the students who had answered my questions in Week 7. Wendy told me that she could remember the Chinese words for younger sister and she had already written them on her storyboard. Similarly, Jason

said he could say “lán shān 藍山” (the Chinese words for the Blue Mountains), instead of “the Blue Mountains”. In addition, he had learnt to how to express “happy” in Chinese because in the digital story he was going to create, he wanted to mention the happy times his family enjoyed in a particular trip to the Blue Mountains. Due to limited time in class, I did not have a talk with Linda. But later, when I was analysing her storyboard, I found the inclusion of “zú qiú 足球” [soccer] on her storyboard (see figure 4.1).

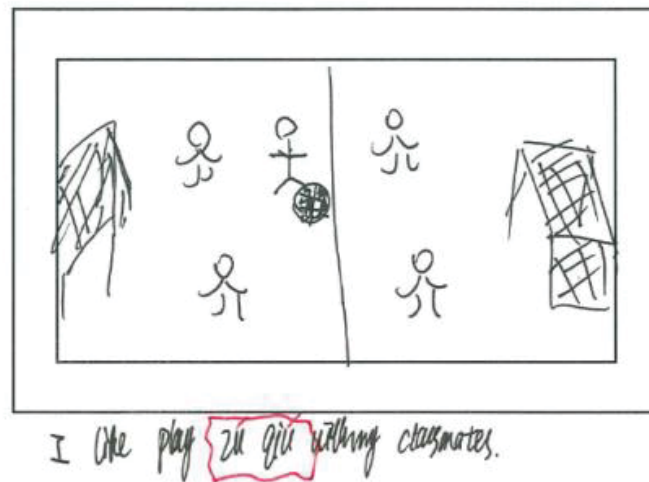


Figure 4.1. Linda’s storyboard.

Another student by the name of Ella also shared with the class that she could recall some items she had learnt before and had already used them in her own digital story. It could be inferred from her description that she could utilise the knowledge “stored” in her memory when it was needed to make her digital story, just like Wendy, Linda and Jason. In the focus group discussion, Jason said, “I can know what I learnt before when I talk about my stories”. His statement supported my observation that DST gave learners the opportunity to remember the knowledge they had gained before.

Data from the participant observation and focus group discussion reveal that students could remember and retain key words and phrases they learnt before when they were related to

their stories. I argue that this was because the process of making digital stories enabled them to learn by doing. In Chapter 2, I highlighted that students were more actively engaged in learning with technology positioned learners as text producers or producers of content (Tan and Zammit, 2016). Tan and Kim (2015) expounded that in such active engagement, learning by doing happen when learners situate themselves in social practices that they locate themselves in. In my study, the social needs of expressing their own stories in Chinese drove the participants to learn by doing. As the task of creating the digital story was an individual work, each participant has to shoulder the entire responsibility of making the digital story. It forced the participants to learn the language more authentically to meet their self-identified purposes for the context they had chosen. Learning by doing thus enhanced the retention of Chinese vocabulary when the context of use was authentic and meaningful to the participants.

My argument accords with Gils (2005), Sadik (2008) and Ribeiro (2015) as all of them advocate that DST promotes meaningful learning by connecting real world situations with the learning of target language and catering to learners' own individual learning interests. Just as these researchers have argued, I observed that when my participants were learning by doing, they were able to make use of their prior knowledge and apply what they had learnt in their digital stories. In other words, the process of making digital stories require language learners to draw on their prior knowledge and actively use the knowledge that matter to them. Drawing on prior knowledge for an authentic purpose plays an important role in learning a new language because it helps learners make a connection between the newly acquired knowledge and the knowledge they acquired before (Angelis, 2011; Liddicoat, 2005; Ringbom & Jarvis, 2009). Ell, Hill, and Grudnoff (2012) pointed out that "prior knowledge might contain facts, experiences, expectations and preconceptions, and be held as knowledge, skills or beliefs about teaching and learning" (p. 56). In my research, the prior knowledge referred to the Chinese vocabulary acquired before this DST project and the past experiences that gave the students

the content for their digital stories. Engaging in DST necessitates learners to draw on their prior knowledge and experience which are key in the retention of Chinese vocabulary. Using newly learnt Chinese words in the context of creating the digital stories engaged my participants in learning by doing and the connection to the authentic purposes and experiences aided them in remembering the Chinese words they learnt to express themselves.

Learning by doing also meant that my students were developing their Chinese vocabulary during the DST project. This finding was similar to a study on using DST for learning Greek as a foreign language; Papadopoulou and Ioannis (2010) found that DST accelerated students' vocabulary development when students learnt new words as they progressed with digital storytelling.

Vocabulary learning is one of the key language skills learning commonly reported in studies on DST (Jakes & Brennan, 2006; Robin, 2008; Thang et al., 2014; Thang, Mahmud & Tng, 2015; Wang & Zhan, 2010; Yang & Wu, 2012). Similarly, in my study, students broadened their Chinese vocabulary as they learnt relevant Chinese in order to tell their own stories fully in Chinese. As the stories were related to their lives, the retention of the newly-learnt vocabulary became stronger. This argument was supported by many students' reflections as they suggested that creating digital stories helped them to remember the newly-learnt vocabulary better. For example, Linda wrote:

*The vocabulary is easy to remember if it is in my story. They are also easy to remember because they appear in my life. (Linda, students' weekly reflection)*

Her fellow classmate claimed that:

*Yes. It [DST] is useful in memorising the vocabulary. I can know the words better, especially the words that related to my story. (Jason, students' weekly reflection)*

Like many reflections, these two reflections show that the retention of the vocabulary was enhanced by its relation to students' life experiences, which led them to engage in a more

“contextual use of language”. In an English as a second language classroom that involved Flips cameras and Movie Maker video editing software, Green (2013) found that DST was beneficial to 6th graders’ contextual understanding of the language. In her study, the participants were able to use the language in their production of digital stories, thus, they focused more on language using than language learning. Similarly, in my study, by employing DST in CFL classroom, the participants got the opportunity to apply the newly-learnt Chinese vocabulary in their stories. This contextual use of language contributed to the retention of Chinese vocabulary.

Such contextual use of language was suggested in the focus group discussion. For instance, Ella expressed, *“If I want to tell my story in Chinese, I have to learn some Chinese words. And when I was learning, I can remember better because these words are related to my story.”* Ella’s response was indicative of my students’ experiences. It demonstrated that contextual use of language was an effective practice for non-background learners in my study as it proved to be effective in helping them remember and use the newly-learnt vocabulary. The students in my study used the Chinese words they had learnt contextually because students each had a story to tell and the authentic use had helped with the retention of newly-learnt vocabulary that related to students’ personal lives.

### **4.3 Promoting Engagement in the Learning Process**

In Chapter 2, I cited many studies on DST that highlighted student involvement (Dupain & Maguire, 2007; Hur & Suh, 2012; Miller & Kim, 2015; Ohler, 2008; Yang & Wu, 2012). Therefore, in my study, I seek to understand how DST engaged students in Chinese learning. Towards this aim, I drew on Chapman’s (2003) three types of engagement, cognitive investment, active participation, and emotional engagement (see section 2.3 for the definitions of the three types of engagement).

My data resonates with Chapman's (2003) argument that the three kinds of engagement are inter-related. However, my data shows that they may not always appear simultaneously. For example, students were highly cognizant of their learning process when they were making digital stories, and such awareness led to active participation and emotional engagement in their Chinese language learning. There is evidence that cognitive investment and active participation entail emotional engagement. However, when students were physically participating in making their digital stories, there were times when cognitive investment might be absent. In the remaining parts of section 4.3, I shall elaborate my analysis on the types of engagement afforded by DST in my study.

#### **4.3.1 Cognitive investment in the learning process**

In Chapter 2, I reviewed studies that reported the development of language skills and the meaningful use of target language brought about by the introduction of DST (Gils, 2005; Jakes & Brennan, 2006; Ribeiro, 2015; Robin, 2008; Sadik, 2008; Thang et al., 2014; Thang, Mahmud & Tng, 2015; Wang & Zhan, 2010; Yang & Wu, 2012). Although the researchers did not use the term "cognitive investment" in their studies, the language development mentioned earlier reflected learners' cognitive investment. In my study, the cognitive investment was embodied in students' understanding and retention of the newly-learnt vocabulary (see section 4.2).

As the students were taught the vocabulary list (Table 3.1) in week 7, I planned to have a quick review in Week 8 to help students recapitulate the newly-learnt Chinese words and phrases. The participant observation of Week 8 offered me a perspective on students' cognitive investment in the learning process. A student by the name of Robbin, who found DST useful for helping him remember the Chinese words, was eager to share what he had learnt. In his original words, "*I learn 'wǒ xǐ huān' [I like]. His answer was extracted from the sentence structure 'wǒ xǐ huān . . . yīn wèi . . . 我喜欢 . . . 因为 . . . [I like . . . because . . .]'*". I taught



them this sentence structure in the previous week (week 7). However, when I asked him how to say “because” in Chinese, Robbin said he had forgotten how to express reasons in Chinese. Producing a complex sentence like this required Robbin to know each Chinese words. Additionally, he had to think of the correct grammatical structure which he did for the independent clause (the first half of the sentence). For a non-background learner like him, he was not yet ready to express the dependent clause in Chinese and then put both clauses together to form a complex sentence. Knowing how to express his hobbies in Chinese requires high cognitive investment. In a DST project conducted in the context of learning English as a second language for university students, Vinogradova, Linville and Bickel (2011) illuminated that with a goal of developing fluency in the written and oral language, undergraduates worked collaboratively and consciously on their language skills to create the stories they wanted to share with others completely in English. Likewise, in my study, students wanted to express their stories fully in Chinese, therefore they put cognitive investment in the Chinese language learning process.

Triggered by Robbin’s answer, Linda recalled the whole sentence structure and code mixed Chinese and English to tell her reason for liking soccer. She said, “*wǒ xǐ huān playing zú qiú yīn wèi it’s funny*” [I like playing soccer because it is funny]. Her expression was grammatically correct, except a few minor errors in the articulation of tones (see section 5.3.1.1 for a discussion of the distinction and pronunciation of different tones). For Linda, she could remember the grammatical structure of a complex sentence to express a reason. She could remember the Chinese words for most of the words she had learnt in the independent clause (the first half of the sentence), except “playing” in Chinese. Her personal reason was not a common expression used by her classmates and she had to learn how to say “it was funny” in Chinese. Not knowing how to express her reason in Chinese, she had to think of ways to complete her sentence grammatically albeit using code mix. Due to students’ limited Chinese

vocabulary, code mixing was evident in my data when students tried to express themselves grammatically. Galambos and Goldin-Meadow (1990) argued that bilingual child's language system is a mixed system, incorporating features from both language models. They further argued that learners will sharply reduce mixing of the two codes after two years of learning. As the Chinese language learning experiences of the participants in my study had not reached two years, they tended to mix the codes from both English and Chinese, a characteristic language feature when they were cognitively invested in their efforts to use Chinese to express themselves.

Besides generating a grammatically correct complex sentence to express a reason for their hobby, non-background learners' cognitive investment in using Chinese for specialised terms and quantifiers was also observed. When I was reviewing the vocabulary related to excursions or trips, Jason uttered a complete sentence, “*wǒ qù le lán shān*” [I went to the Blue Mountains]. “*lán shān*” is a proper noun, a specialised term that is related to places of interest in Australia. From his reflection “*I can know the words better, especially the words that related to my story*”, it can be seen that DST helps him effectively memorise the specialised terms. In this sentence, not only must Jason remember the individual words in Chinese, but he also had to know how to express the past tense based on Chinese language. He used “*le [了]*” to show that he had been to the Blue Mountains. This word is often used to show a past action in Chinese.

When I came to the review of the words related to family, Ella also used code-mixing to express herself: “*wǒ jiā yǒu six kǒu rén*” [There are six people in my family]. Unlike in English, Ella had to think of an appropriate quantifier to describe the number of people in her family and in Chinese, specific quantifiers are used to refer to different nouns. Ella had to be prompted before she could articulate “*six*” in Chinese to me. It took her a while before she could repeat her sentence entirely in Chinese.

These illustrative examples demonstrate the amount of cognitive investment non-background learners have to put in when they express themselves in Chinese. In my study, students' cognitive investment was also embodied in their attempts to build connections between *pinyin* and Chinese characters. For instance, the words for younger sister are “mei mei [妹妹]” but nothing in these characters gives a cue to how they should be pronounced. The ideographic nature of Chinese language becomes a cognitive “stumbling block” when the non-background learners try to read the Chinese words needed for them to express their thoughts and opinions. I will discuss this challenge in Chinese language learning in section 5.3.1.3.

Learning new vocabulary in the process of creating digital stories necessitate a substantial amount of cognitive investment. Take Alice's reflection as an example. Her story was about her favourite animal. This theme was not common and I left it out in the vocabulary list for Week 7. In that week's reflection, Alice wrote:

*My story is about my favourite animal. It is not in the list that Miss Fu [refer to me] showed us. But I still learn some words like “wǒ xǐ huān” [I like . . .] and “wǒ qù le” [I went to . . .]. I think I can use them some day. (Alice, students' weekly reflection)*

Her reflection shows that although the Chinese words were not related to her own story, she still had learnt some sentence structures in the process of making digital stories. It indicates that her language skills were developed in this DST project as she had engaged in learning Chinese cognitively. The same view is evident in other students' learning behaviours and reflections. For instance, in the same week, Ella reflected,

*I learn a lot of words related to family in Chinese. My story is about myself and I mention my family in the story. (Ella, students' weekly reflection)*

The affordance of DST for engaging my students cognitively was evident in my study when I used it to teach Chinese to the students who were non-background learners. Unlike Alice, the vocabulary list was useful to Ella in the process of making her digital stories because

she could employ some words and sentence structures in her story. Based on my field notes, Ella tried quite hard in pronouncing the *pinyin* of family members when I taught her how to read them, and she included these *pinyin* in her storyboard (Figure 4.2). Ella’s reflection shows that she gained the knowledge of Chinese words during this DST project, which is equal to the notion that she was cognitively engaged in the Chinese language learning process and her language skills were developed.

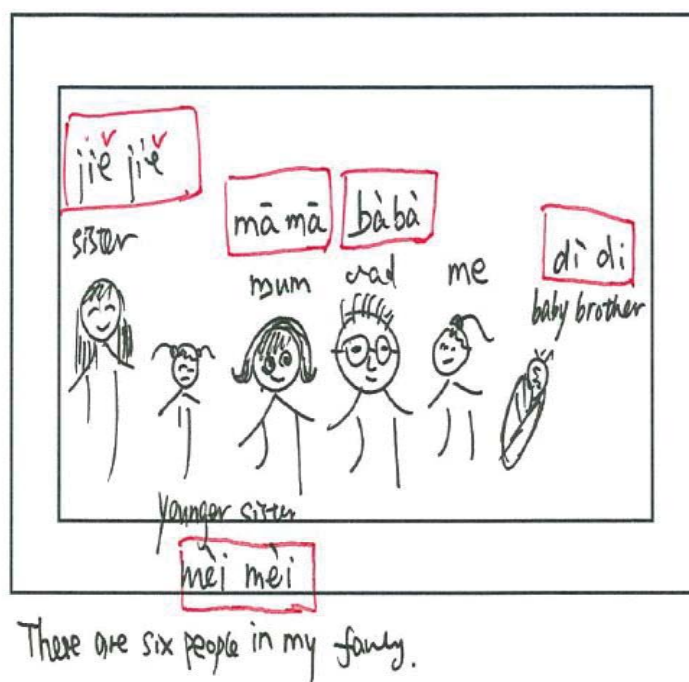


Figure 4.2. Ella’s storyboard.

Ella also mentioned this point in the focus group discussion when I asked the participants whether DST is an effective method of learning Chinese.

*I think it is very helpful. I learn the words about sport and trip. Like “zú qiú” [soccer] and “tiān qì” [weather]. But the family part is the part I learn most of the words. As those words like “bà bà” [father], “mā mā” [mother], “jiě jiě” [older sister], “mèi mèi” [younger sister]” and “dì dì” [younger brother]”, I use all of them in my story because I need to introduce my family in my story. (Ella, focus group discussion)*

Ella's words in the focus group discussion show that she had mastered the referents for family members in Chinese quite well as she could say these words with ease, which indicates that her cognitive investment in the Chinese language learning process was quite high. Additionally, my data show many examples that students were attentive when I taught them the words common to a theme, and the usage of *pinyin* in the storyboards was quite common, even if this meant they had to code mix first before they could narrate their digital stories fully in Chinese.

In the context of learning English as a second language for senior high school students, after comparing the test results from comparison group and experimental group, Yang and Wu (2012) confirmed that DST contributed to learners' academic achievement in English by providing an authentic productive learning environments. The development of English language skills indicated learners' engagement in the learning process. In my study, although I did not organise tests for the participants, with the data being displayed and analysed earlier, it could be concluded that in a CFL classroom, DST is able to engage learners in their language learning process by enhancing learners' cognitive investment.

#### **4.3.2 Active participation in the learning process**

According to Chapman (2003), active participation refers to the extent to which students are making active responses to the learning tasks, including asking relevant questions and solving task-related problems. In my study, the active participation included physically participating in making digital stories and helping one another in dealing with the technical issues encountered in the process of making digital stories.

My data show that students were actively listening to my instruction and contributing to the class discussions when appropriate. For instance, in Week 4 when I was familiarising students with the steps of making a digital story, I told them that I wanted to write a story about my family and sought suggestions from them on what I should write. One student said family members. Then I nominated a student by the name of Gloria for more suggestions. At first, she

was not able to answer my question. The girl who sat next to her told her that she could name the family members. A boy sat at the back said she could say something happened in her family that left a deep impression on her. I noted that the students' responses were drawing from what they had learnt prior to this week. Therefore, my intention of Week 4 was met as the trigger question I asked was intended to draw on learners' prior knowledge of how to organise a story. Although not all the students were able to remember the steps of making a digital story, the individual contribution of the students who shared their ideas had helped to construct the shared knowledge. Hence, the active participation was interlinked with cognitive investment.

From the participant observation of each week, students interacted with one another and helped one another while they were learning about digital stories and how to create them in Chinese. I drew upon my data in Week 4 to further illustrate students' physical participation in the DST project. In that lesson, I showed the students an example of a digital story. Then I asked a boy by the name of Richard why it was called a digital story rather than a story, but he seemed to be confused about this question. Then his fellow students began to give him some hints. One of his classmates pointed at the computer in the classroom and mouth out the word "computer" silently. Another student wrote three letters "PPT" on the paper and showed this paper to Richard. After they had finished doing this, Richard replied that it was because the story was done by computers and they needed to make PPTs to present the stories. This answer was acceptable, so I reiterated that the application of technology in the story-making process was the main reason for calling it a digital story. His answer might not have been sophisticated, but it was a product of active contributions from his peers as a form of peer assistance. In other instances, whenever students had no idea how to pronounce certain Chinese words, their peers would try to help or think alongside. If their friends did not know the answers, they would come to me and learn the right pronunciation together, even if the words were not related to their peer's digital story. In these cases, active participation was evident when the students were

actively contributing to respond to my questions in the teacher-led discussions. The cognitive investment was equally evident as students were trying to develop their language skills together with their classmates.

In a study that included DST in CFL classroom, Thang, Mahmud and Tng (2015) conducted the production of digital stories in groups. They observed the value of teamwork as they found students were able to improve their language skills through collaborating with other students in the creation of digital stories. However, in my study, each individual had their own stories to share. Therefore, teamwork was not evident but peer assistance in developing the content for the narratives during shared discussions was evident.

Active participation in the form of peer assistance was also evident in offering technical assistance. In the last week of making digital stories (Week 9), when students were required to finish the PPT and record their own voices, active participation heightened. In that week, a student did not know how to insert a new slide in PPT. Her friend who knew how to do so willingly offered her help. Another student did not understand how to record his own voice in the PPT. His friend sitting next to him guided him how to do so, step by step. The participants got help from other students and they offered their help to others, as well. This healthy and collaborative learning environment enabled all the learners to actively participate in the language learning process. During the focus group discussion, Jason shared about the difficulties he encountered in the process of making digital stories, and he pointed out that Mike always helped him, and they learnt how to express themselves in Chinese together in class. In his original words:

*When I was making the PPT, the biggest problem is record [recording] my own voice in the PPT. When I don't know what to do with the laptop, I always turn to Mike. I know he is good at doing this computer thing and he is really a good teacher. We learn the Chinese words together and he helps me in making PPT. I really enjoy this time. I*

*think sometimes my classmates can explain one item to me better than the teacher because we know each other and can understand each other's words. (Jason, focus group discussion)*

In an English for Academic Purpose course, Thang et al. (2014) advocated that when the college students were physically creating the digital stories, their ICT skills improved and they appreciated the opportunity to use technology. In my study, when the participants were making their own digital stories, their ICT capability enhanced the peer assistance they received.

In the focus group discussion, Richard expressed that he was willing to help others. This was the student who had been assisted by his classmates in answering why it was called a digital story rather than a story in Week 4. He thought that helping each other was beneficial to their Chinese language learning.

*I like to help my friends. At the same time, my classmates like to ask me for help and I also get help from them. I think helping each other is good for our study because we can progress together. (Richard, focus group discussion)*

Richard's opinion about peer assistance was shared by other participants in the focus group discussion. His words suggest that there were students who were actively participating in creating digital stories by helping their peers in ways they could. Such active participation was deemed beneficial to non-background learners' Chinese language learning. They shared what they knew in terms of language skills and technical skills for creating digital stories. In this way, they pulled together their shared knowledge to help one another complete their digital stories. When they needed further guidance from me, they were eager to learn together even though the questions they asked pertained to their peer's digital story. This situation is a sign of the co-existence of both cognitive investment and active participation.

Through the entire digital story-making project, the participants were active in verbally asking the questions. However, my field notes show that in Weeks 7 and 8, when the students were learning how to narrate their digital stories fully in Chinese, they became most active in



raising their hands and seeking for my assistance. They were driven by their strong desires in knowing how to express themselves in Chinese. According to my participant observation, the questions being most often asked were “Miss, how to say this in Chinese?”, “Miss, how can I pronounce this word in my story?”, and “Miss, can you listen to my pronunciation and tell me am I right?” These questions related to the successful accomplishment of their digital stories, which indicate that they were both cognitively and physically participating in solving the task-related problems.

DST encouraged active participation, which was not only observed by me, but also noted by students themselves. Their weekly reflections show that they appreciated the peer assistance they received when their peers were not only actively engaged in creating their own digital stories, but also helping their peers to do so. This is an example from one of the students’ weekly reflection:

*Sarah’s Chinese is quite good. She knows a lot of pinyin than me. I like to ask her when I don’t know the pronunciation of a word. But sometimes she doesn’t know. Then we have to ask the teacher. (Gloria, students’ weekly reflection)*

Gloria was the girl who had been assisted by her peers in answering how to write a story about family. From her reflection, it can be seen that her classmate had also offered academic help to her in terms of pronouncing *pinyin*. My observation of active participation also cohered with students’ opinions expressed in the focus group discussion. Ella reported that she often received help from her classmates when she needed help in creating her digital story. Her opinion suggested high levels of active participation when the students were engaged in the process of making digital stories:

*When I have difficulties in answering the teacher’s questions, like how to count 1-10 in Chinese... my classmates will always help me. They speak out the answers directly or say it silently with just moving their lips... then I get the information and just search*

*the similar answer in my memory and then I get the answer! (Ella, focus group discussion)*

In fact, receiving help from peers was not the only way Ella physically participated in the learning process. In section 4.3.1, I mentioned her efforts to pronounce the *pinyin* of family members in class. Thus, Ella's cognitive investment and active participation were both observed in her digital story-making process.

Miller and Kim (2015), Hur and Suh (2012) and Ohler (2008) advocated that the production of digital stories made learners actively involved in the learning process as they realised that they were at the centre of learning and they were the producers of their stories. In my context, the participants shouldered the whole responsibility of creating a Chinese digital story of their own, thus, they had to actively participated in the digital story-making process with the existence of cognitive investment as well.

In the illustrative examples I have presented above, my data suggest that active participation was interlinked with cognitive investment. However, my study also shows that active participation did not always lead to cognitive investment. There were times when some of the students were searching for images online, but these images were not related to their digital stories. For instance, in Week 9, upon closer observation, I noted that one of my students, by the name of Mark, was searching for images about a football team when he was supposed to be creating a digital story about his family. Another student, Sandy, was searching for some Christmas decorations while her story was about her trip to Greece. When I was on my rounds to monitor students' work, I noticed that another student called John was reading online news about a famous football team. Then I asked him about his lack of concentration. He said it was his favourite team and there would be a game between this team and another strong team in two weeks' time, so he wanted to know more about the match. John's story was about his favourite sport. He was distracted by the online news and forgot temporarily that his purpose

of going online was to search for relevant images for his digital story. In another instance, I caught four boys misusing the audio recording function of PPT rather than focusing on the story-making process in Week 9. These examples in my data show that active participation can include off-task behaviours, even when physical engagement with a given task is evident, which became a challenge in my study (see section 5.2). After analysing the studies involving DST in different subjects in primary school (math & geography class), secondary school (history class) and college (sociology), Gils (2005) pointed out that to use DST in education sounds promising, but it takes more to make the applications of DST in education successful. He further reported that the entertainment aspect of DST should not supersede the educational aspect. In my study, students' playful behaviour when engaging in digital media production was a sign of entertainment aspect and it surpassed language learning when students were not cognitively invested in making their own Chinese digital stories.

#### **4.3.3 Emotional engagement in the learning process**

Axelsson and Flick (2010) defined student engagement as “how involved or interested students appear to be in their learning and how connected they are to their classes, their institutions and each other” (p. 38). Their notion of engagement suggests that students' interest affects their engagement in the learning process. Chapman (2003) clarified that the engagement brought by students' high levels of interest or positive attitude towards the learning task could be regarded as emotional engagement. In a technology-based second language learning context, Almeida-Soares (2008) and van den Branden (2006) contended that DST has an advantage on second language acquisition because it is not only highly interactive, but also highly motivating and personalised. I found this argument relevant to my study, as this feature of DST was essential in emotionally engaging my research participants. And an analysis of data shows that the instances of cognitive investment and active participation entail emotional engagement, although this did not take place all the time. Even in instances when the students were

physically engaged but not cognitively engaged, they were emotionally engaged in the process of creating digital stories, albeit for the wrong purpose.

The participants' fondness of this DST project was most obvious in their reflections. There was one part in the reflection form where I asked students what they enjoyed about the weekly Chinese language lesson. All 32 participants gave positive answers to this question, and their replies can be divided into four categories (see Table 4.1).

Table 4.1. *What Students Enjoyed About the Weekly Lesson.*

Part Enjoyed	Number of Students Answering This Part
Writing my own story	17
Drawing pictures	5
Drawing characters	5
Learning new words	5

The answer “writing my own story” was mentioned by more than half of the participants. In Chapter 1, I made clear my intent to make Chinese learning student centred and meaningful by allowing students to draw on their prior knowledge and experiences to connect Chinese language learning with their lives. I argued that the purpose of this study was to establish a connection between language learning and the real world to make Chinese language learning more meaningful to non-background learners. Students' weekly reflections suggest that my intended goal had been met. For instance, a student, Ken, wrote,

*I like this way of learning because I can write what I want. My story is about a game we play last month. Think about the time we won is so exciting and I really want to finish this story and say it in Chinese. (Ken, students' weekly reflection)*

Ken mentioned that the process of making his digital story allowed him to recall the exciting moment he experienced a month ago, which inspired him to finish the Chinese version of the story. Based on Chapman's (2003) description, Ken's affective reactions to the learning task was high in this DST project, reflecting his high level of emotional engagement, and thus,

resulted in his cognitive investment in learning the language and active participation in making his own digital story. Another student by the name of Daniel held a similar view with Ken:

*I can talk about my favourite star; I want others to know him and like him. So I need to write this story carefully as I want Chinese people to know him. (Daniel, students' weekly reflection)*

In Daniel's reflection, he mentioned that he wanted more people, including Chinese people, to know and like his favourite star. His "mission" for writing his story gave him the motivation to narrate his story fully in Chinese, which meant he had positive attitude towards the digital story-making process and this positive attitude had brought in his cognitive investment and active participation in the weekly Chinese language lesson. Students' weekly reflections suggest that they were driven by their design and interest to finish their digital stories and to learn more Chinese. Even when students had to complete their digital stories at home, all of them handed in their work promptly to me in the following week. Therefore, it could be concluded that in my study, learners' emotional engagement supported their cognitive investment and active participation in class.

In the reflection forms, five students indicated that they enjoyed learning new words. This enjoyment could be regarded as positive attitude towards the learning task, which led to cognitive investment and active participation because learners took the initiative to take part in the language learning process. Axelson and Flick (2010) argued that emotional engagement is crucial for learning a new language. In my study, as all the participants had expressed their fondness of this DST method of learning Chinese, this favourable opinion led to the development of language skills and active participation in the learning process.

Students' positive responses on liking this DST approach of learning Chinese could be heard in the focus group discussion as well. In the discussion, I asked the five participants whether they liked this DST project. The participants generally had a favourable opinion of

DST. Expressions such as, “*It makes me want to learn some new things*”, “*It is more interesting than the normal textbooks*”, and “*I want to learn the Chinese of my story*” were used by them to share their interest in using Chinese to create digital stories. These expressions suggested that learners’ cognitive investment and active participation were raised by the high levels of emotional engagement. Then I further inquired them whether they were more eager to learn Chinese through this DST project. The excerpts in Table 4.2 show almost all the participants were motivated to continue learning Chinese even after completing the digital stories, except for Richard who was motivated to complete it. However, he suggested that he did not wish to learn further once his digital story was complete (see the challenges he encountered during this DST project in Chapter 5).

Table 4.2. *Excerpts of Students’ Motivation in Learning Chinese Through DST*

<p><b>Richard:</b> I just want to learn the words and phrases related to my story. I just want to finish this story quickly and don’t want to learn more words that are not related to my story.</p> <p><b>Alice:</b> No, I don’t agree with you. I want to write many other stories and I also want to know the Chinese version of my stories. This digital storytelling project makes me realise that I maybe can become a writer in the future. I will write more stories and I want to learn more Chinese because I want the Chinese people to love my stories, too.</p> <p><b>Jason:</b> Yes. I become more eager to learn Chinese and I hope I can learn some Chinese songs, not just the stories. I also want to see the Chinese video; it makes me want to know more about China and Chinese.</p> <p><b>Ella:</b> Yes. Making stories is funny and is more interesting than the normal Chinese classes. I think I will be happier to learn more Chinese if it is taught in this way.</p> <p><b>Robbin:</b> I have to say that Chinese is hard. But it makes me feel quite good to tell a story in Chinese. So, I still want to learn more Chinese although it is very hard for me. I like challenges and I think I can make it.</p>
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The discussion between the participants suggests that DST has raised their emotional engagement in Chinese language learning and their cognitive investment as well as active participation increases at the same time. Almost all were driven to learn more Chinese words or suggested their desires to deepen their competencies to use Chinese to express themselves.

In my field notes of Week 7, Alice conveyed the idea that she wanted to learn the Chinese words and phrases related to her own story and she was so excited that she could tell a story in Chinese. She also told me that she would show this story to her family after class. Alice's description demonstrates that saying a story in Chinese had become a proud thing for her, and she became more eager to learn Chinese, which led to the development of her language skills and active participation in the lesson time. When students like Alice enjoyed creating digital stories using Chinese, they were moved towards pursuing "passion-based learning" (Lankshear & Knobel, 2010, p. 20) whereby learning is driven by students' personal interest and personal attitudes towards Chinese language learning. Such forms of learning reflected learners' emotional engagement and brought in the improvement of academic achievement as well as the high involvement in the learning process.

However, students' emotional engagement did not remain at a high level all the time in my research. Despite students' favourable opinions about this DST approach of learning Chinese, there were negative reports on the difficulty of learning Chinese through using DST. Although their emotional engagement dropped when they faced technical and linguistic difficulties in Weeks 8 and 9 (see Chapter 5), students' enjoyment of DST in Chinese lessons remained strong until the last week of my research (Week 10). Many reflected that they were still interested in it and found it meaningful to learn Chinese through DST. For instance, Ella reiterated the opinions about the freedom to express themselves in Chinese and implied her emotional engagement had contributed to her language development and classroom involvement:

*This storytelling project is interesting than the normal class. We don't just copy language down and accept it. We also make our own things. So I am happy to join this project and I am happy to learn the language. (Ella, students' weekly reflection)*

Feeling free to “make [their] own things” suggests agency in learning. Kim, Tan and Bielaczyc (2015) pointed out that promoting agency in learning contributes to the encouragement of student-centred learning. The learner-generated designs provided my research participants with opportunities to bring in their own intentions and thoughts to engage themselves in the learning process with their peers and the teacher. In my study, the outcome of the learner-generated designs was meaningful to the individuals and the social context they associated themselves with. My analysis on the increase of emotional engagement coheres with Yang and Wu’s (2012) argument that digital productions promote the learning motivation and self-esteem as students develop ownership in learning, which is the main factor to inspire learners’ educational motivation. In my study, almost all my students were emotionally engaged enough to be active text producers using Chinese, even though they were non-background learners. And consequently, learner’s cognitive investment and active participation in the DST project were enhanced by this emotional engagement.

In regard to engaging learners, although based in different contexts, I notice the findings of Yang and Wu’s (2012) study, which is about teaching English as a second language to high school students, are closest to mine. They put forward that DST in second language acquisition improved academic achievement, promoted learners’ autonomy and enhanced learning motivation by providing learners with a meaningful authentic scenario related to their personal experiences. In my study, DST promoted meaningful learning by connecting Chinese language learning with students’ real lives and engaged learners by laying the learning responsibility on themselves.

#### **4.4 Summary of the Chapter**

In the context of applying DST in a CFL classroom, my data indicate two potential affordances of DST, including enhancing the retention of Chinese vocabulary and engaging students in the learning process. In my study, I also observed three prominent forms of



engagement when students were involved in creating digital stories, i.e. cognitive investment, active participation and emotional engagement. Although these types of engagement are interlinked, my study argued that active participation and cognitive investment do not always co-exist at the same time.

Despite the affordance of DST in learning Chinese, the non-background learners encountered challenges in the process which need to be addressed in order for them to complete their productions.

## **CHAPTER 5:**

### **The Challenges of Digital Storytelling in CFL Education**

#### **5.1 Introduction**

In Chapter 4, I analysed and described the educational affordances of DST in a CFL classroom in the Australian context. In this second analysis chapter, I address my second research question pertaining to the challenges of using DST to teach non-background learners of Chinese. Although using DST enhanced the retention of Chinese vocabulary and engaged learners in their Chinese language learning, it inevitably presented several challenges too, namely, (1) students' overemphasis on technical aspects and (2) the linguistic characteristics of Chinese language for non-background learners. In the remaining sections of this chapter, I use illustrative examples from the participant observations, focus group discussion, and the artefacts from students' weekly Chinese language lessons to describe and discuss these two main challenges.

#### **5.2 Students' Overemphasis on Technical Aspects**

In Chapter 3, I briefly described students' computer literacy competences and mentioned that PPT was an ICT tool they were familiar with. They had used PPT at school in the past three years, prior to the commencement of my research and teaching. However, the experience each child had with using PPT was varied. This was my primary reason for choosing PPT as the tool for the students to create their digital stories. When creating digital stories using PPT, the basic PPT-making knowledge was required, such as inserting new slides, inserting images from websites, and recording the audio. However, due to the shortage of resources in the school, there were limited opportunities for students to use PPT. According to my mentor teacher who supervised my teaching at the research site, my research participants could only use PPT twice a month on an average. Given the limited access to ICT resources, timeframe and student competency in using technology, I modified Ohler's (2008) recommended practices for

implementing a DST project (see section 3.3.2). In my design, I asked the students to create only 5 to 10 PPT slides, write a story of no more than 50 words in Chinese, and add some images but no music due to the limited timeframe.

As discussed in Chapter 4, learning by doing is essential for non-background learners to draw on their prior knowledge and apply what they have learnt in this DST project. However, based on my participant observations, I noted that during crunch time (Weeks 8 & 9) when students were expected to making their own PPTs, there were students who focused more on technical aspects rather than reflecting on the language choices. This finding will be discussed at length in the remaining part of this section.

My data suggests that one factor that contributed to students' overemphasis on technical aspects was their lack of ICT capability. In this chapter, the ICT capability exclusively refers to PPT-making skills. After checking with my mentor teacher about students' prior experience in using technology, I used one lesson prior to the DST project to teach them how to create the digital stories using PPT. Specifically, I taught them how to insert a new slide, how to insert images from a website, and how to record their voices in the slides. However, one lesson was not enough for them to familiarise themselves with the PPT-making skills, especially for those who needed further support in this aspect.

In Week 4, I ended my lesson with the class reflection on students' experience about creating digital stories. Linda and Jason expressed that creating digital stories using PPT was a challenge to them. Linda said that she had to learn how to create PPT slides "*from the start*", and the problem was exacerbated when she had to do so using a laptop, a mobile device she did not use frequently in school. Jason told me that he "*really had a hard time doing it [making PPT]*". The lack of ICT capability had slowed the participants' speed of making their digital stories. In my research, there were only two lessons (Weeks 8 and 9) set aside for them to make their own digital stories. For the students who were less familiar with the steps of making PPT,

they had struggled throughout the lessons in Weeks 8 and 9 which were dedicated for the technical productions. From the participant observations, I noted that there were four main difficulties experienced by students, namely: inserting images from websites or from a certain folder; inserting a new slide; recording the audio; and saving the PPT to a certain folder. Amongst them, the difficulty of recording audios was the most prominent challenge as half the participants did not know how to use the built-in microphone to record their voices to narrate their stories using PPT.

These challenges were again mentioned in the focus group discussion by many students, such as: Richard - *“I know all the steps except the audio recording step”*; Ella - *“I have no idea of the steps to insert a new slide or record my voice and so on”*; and Jason - *“I always can’t find the correct button of recording the audio”*. The lack of such ICT skills posed an initial hindrance to students who were less familiar with PPT when they thought they could concentrate on the creative process of using language and images to tell their stories. In Wang and Zhan’s (2010) study, they applied DST in four different types of classes (*Computer Applications in Education, Computers in Education, Networks in Education and Mandarin Chinese IV*) with graduates and undergraduates. Their research participants had no problems in mastering the skills needed to create digital stories with Windows Movie Maker, however, they did have problems involving such as large image file size, fuzzy images in the story and incorrect file format. Narrative recording was a second problem for the participants. Wang and Zhan found that the problems were caused by students’ inexperience with technology and these problems still existed when the students finished making movies. The situation in my study was different as the technical difficulties students encountered faded off by weeks and students remained motivated to finish the digital stories.

My participant observation showed that for the same students who struggled with recording the audio and inserting the images in Week 8, these difficulties were temporal and no longer evident as they became more familiar with the process of making PPT in Week 9. The students wanted more than two weeks to do a better job. Linda wrote in her reflection: *“It takes a long time and I have to think about so many things in order to make a PPT”*. At the end of the presentation week (Week 10), the participants felt proud of themselves as they could narrate their stories in Chinese. I would argue that although the participants were frustrated when they were struggling with technical issues, it was their high level of motivation that kept them engaged and committed to see through the completion of their digital stories.

My data shows that students’ overemphasis on technical aspects was not necessarily due to encountering with technical difficulties all the time. The misuse of the functions in PPT was another factor. For instance, in Week 9, the students were told to record their own voices as a narration for each slide. In that lesson, I showed students the steps for recording the audio narration on PPT, and then I gave them 10 minutes to record their own voices in their digital stories. When I was going around to attend to students who needed help, I caught four boys (James, Eric, Leo and Raymond) recording funny sounds in the PPT together and then listened to it and laughed out loudly. They also distracted the nearby students by asking them to listen to the funny sounds.

In Tan’s (2013) study that involved adolescents’ use of MediaStage (an animated environment that allows the users to create 3D productions using a range of modalities) for developing a movie on Macbeth, such off-task playful behaviour was also observable. In Tan’s (2013) study, the participants also encountered limited timeframe to be familiarised with the functions of MediaStage. Based on Tan’s ethnographic study, she found the students more interested in experimenting with what was technically afforded by MediaStage, rather than discussing and justifying their meaning-making choices for their digital media productions.

Tan (2013) suggested that in order to benefit students' language learning when engaging in digital media productions, students had to spend more time reflecting on their meaning making choices in order to develop critical literacy skills.

Similar to Tan's study, I would argue that off-task playful talk and behaviour were inevitable as the students explored what they could do technically. However, because of the tight timeframe and the task to be completed, the students had to be guided so that such off-task playful talk and behaviour would not hinder the students from completing their task well. Gils (2005) pointed out that it must be ensured that the entertainment aspect of creating digital stories should not supersede the educational aspect. In my study, the entertainment aspect referred to the engaging process of making students' own digital stories and the educational aspect is learning the Chinese language.

As a beginning teacher, I fell short in redirecting the four boy's attention in a large class size of 32 students. When the four boys were playing a fool by making unrelated funny sounds in their narration, they were emphasising the entertainment aspect of DST. Moreover, their off-task behaviours affected the other students seated close to them. For instance, Ella pointed out in the focus group discussion that James, one of the four boys who were busy making funny sounds in Week 9, always disturbed her when she was making her digital story: *"He always asks me to listen to the odd sound he record in the PPT and show me the funny images he find online. It's really annoying!"*. Ella's statement shows that James was physically engaged in using a laptop, but his excessive attention on the entertainment aspect of DST not only distracted himself but also other participants.

When I used my assessment rubric (see Appendix 4) to evaluate the quality of the digital stories created by the four boys, I looked for the following key things in their products: (1) whether the story had a clear theme, (2) whether all the images in the PPT were related to the theme, and (3) the quality of their oral expressions in the audios. The result was that only

Raymond's digital story was acceptable based on the three key criteria listed above. Leo's digital story had three irrelevant images, while James, the boy who disturbed Ella in her digital story-making process, only included funny sounds in his audios, which meant there was no Chinese in his PPT. However, the most unsatisfactory story was Eric's. In his story, four images were not related to his theme, and his audios were full of funny sounds.

### **5.3 Linguistic Characteristics of Chinese**

Scrimgeour (2013) put forward that for the learners whose mother tongues are alphabetical, Chinese is a demanding language to speak and write because of its distinctive linguistic characteristics. In my study, the linguistic features of Chinese were an ongoing challenge for non-background learners in their process of producing Chinese digital stories, as the participants need more time to master the Chinese language skills. In this section, I discuss two distinctive themes related to the linguistic characteristics of Chinese, namely, (1) oral expression of Chinese and (2) Chinese writing system.

#### **5.3.1 Oral expression of Chinese**

Hertzberg (2016) emphasised the importance of oracy as it is the predictor of literacy success. She further claimed that for non-background learners, the spoken language should be mastered first before they learn the written system of the target language. She also pointed out that applying natural talk in the language learning process is an effective method to master the spoken language. In my study, to make Chinese language learning meaningful, the participants were required to narrate their own stories fully in Chinese. Therefore, the oral expressions of Chinese became vital in the language learning process. However, three aspects related to speaking Chinese were discovered when my students created their digital stories: (1) the distinction and pronunciation of different tones, (2) the articulation of the vowels and consonants that have different pronunciation in English, and (3) lack of connection between the written character and its pronunciation.

### 5.3.1.1 The distinction and pronunciation of different tones

English is a non-tonal language. Languages that have tones make use of manipulations in pitch height to change the meanings of words and sentences. Tonal languages are spoken by a majority of the world’s population, including most of the languages in Asia and Africa. Chinese is a tonal language that includes four regular tones and a neutral tone (Hao, 2012), in which the meaning of a word can be completely changed by varying the pitch of the tone (Tsukada, Xu, & Rattanasone, 2015). In Figure 5.1, the numbers in parenthesis indicate that the starting and ending pitch of each tone are on a 1–5 scale, with 1 referring to the lowest pitch and 5 to the highest pitch (Chao, 1948).

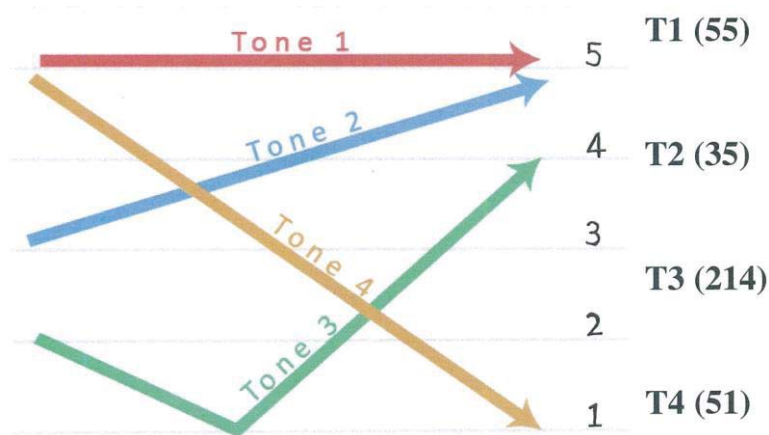


Figure 5.1. Four regular tones in Chinese (adapted from Huang & Liao, 2007).

Take the syllable “ma” as an example: “mā 妈” (T1) means “mother” while “má 麻” (T2) means “hemp”, “mǎ 马” (T3) means “horse” and “mà 骂” (T4) means “to scold”. As the same syllable with four different tones conveys four different meanings, it is clear that the distinction and pronunciation of lexical tones in Chinese is essential for communication.

Hao (2012) argued that the major difficulty learners face in acquiring tones is associating pitch contours with discrete tonal labels. This finding is applicable in my study as the participants could not recognise the tone when they saw the tonal labels. According to the U.S. Foreign Service Institute, it takes 2,220 hours for non-background learners to master Chinese,

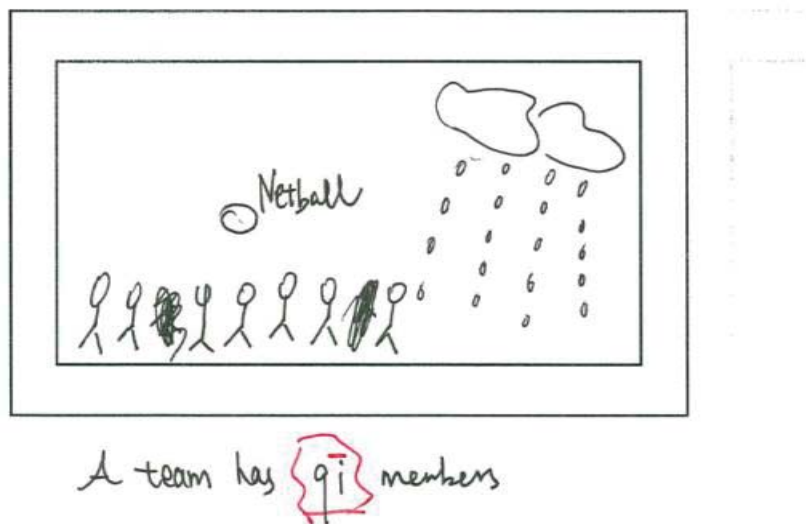


however, in my study, the participants had only learned *pinyin* for 10 weeks (1 hour per week) prior to creating digital stories. With only 10 hours' learning experience, it was inevitable that they had difficulty in distinguishing and pronouncing different tones of Chinese.

In the participant observation, students indicated that different tones in Chinese made the narration of their digital stories difficult. In my teaching, I used *pinyin* to help them remember how to say certain words in Chinese. However, relying on this alone was insufficient to help them say the *pinyin* properly. They were able to write the *pinyin* and read the words, but they could not pronounce them correctly in their independent narration. Based on the participant observation in Week 4, when I asked students whether they liked the DST way of learning Chinese, Richard said he preferred this way but he thought the oral expressions, especially the recognition of different tones, was difficult for him. In his own words, "*I always feel confused and I need a lot of time to think which tone is it*". My field notes also reflected that Richard was not able to distinguish T2 and T3. Instead of saying "hǎo", he said "háo". Tsukada, Xu and Rattanasone (2015) argued that non-native speakers differ from native speakers in their production of Chinese lexical tones, with the former frequently confusing T2 and T3. This is because these two tones both raise pitches at the end, but T3 drops the pitch first (Chao, 1948). As non-background learners of Chinese, Richard's confusion was common because in fact, the whole class could not pronounce these two tones correctly.

In Week 8, when students were working on the Chinese version of their storyboards, I ended my lesson by asking them to reflect on the problems or difficulties they encountered during the production of their digital stories. A student by the name of Cathy particularly mentioned that the tones made learning Chinese difficult for her. The participant observation of Week 8 suggested that she had a tough time in distinguishing different tones in her digital story despite receiving assistance from me. In her original words, "*I don't have the sense of tones because in English there is no tone*". As a result, she always forgot to write down the

tonal labels when she was copying *pinyin* from the stripe I gave her (see figure 5.2). She also told me that she could only pronounce the four tones in the same pitch, which meant she could not speak Chinese as a tonal language. This problem was common in my study as most of the audio narrations were at the same pitch (including Cathy), and I could not differentiate the four tones in their recording. Orton (2008) observed that Australian students lack the global sense of tone, which prevents students from saying the correct tone of each *pinyin*. As the learners did not have the notion that Chinese is a tonal language, they spoke Chinese as a non-tonal language just like the way English was spoken.



*A team has “qī” [seven] members.*

Figure 5.2. Cathy’s storyboard.

Whilst students indicated an overall satisfaction in creating digital stories (see section 4.3.3), there were students who occasional disliked DST in Week 8 when they had to narrate digital stories using Chinese *pinyin*. Daniel’s reflection was an illustrative example. He admitted his fondness of DST first and then he mentioned his dislike.

*The way of digital storytelling to learn Chinese is interesting. But I don’t very like the audio recording part because I cannot say the correct tones. I’m not able to say it*

*correctly by myself. I can only say the pinyin correct follow the teacher. (Daniel, students' weekly reflection)*

Daniel's reflection shows his inability to pronounce the tones alone. In his final digital story, he pronounced the four tones in the same pitch, just like Cathy. In the focus group discussion, all participants talked about the difficulties they came across in pronouncing different tones in Chinese. Richard's response in the focus group discussion epitomised all students' confusion:

*My real challenge is the language. I don't think I can say the pinyin correctly because I have no idea of the tones of Chinese at all. I don't know why it has tones but English doesn't. It really confuses me. Especially the third tone is the most difficult one. (Richard, focus group discussion)*

In my study, due to the tight schedule, students had limited time to build a global sense of tone. Hence, the distinction and pronunciation of different tones became a common difficulty experienced by all the participants. Meanwhile, problems like the T2/ T3 confusion and missing tonal labels could also be resolved if they had greater experience in learning Chinese.

### ***5.3.1.2 The articulation of the vowels and consonants that have different pronunciation in English***

According to Huang and Liao (2007), there are 10 basic single vowel sounds in the Chinese pinyin system. Based on these sounds, there are three kinds of vowels (yùn mǔ 韵母). They also pointed out that there are 22 consonants (shēng mǔ 声母) in the Chinese pinyin system. Table 5.1 lists the vowels and consonants in the Chinese pinyin system.

Table 5.1. *Vowels and Consonants in Chinese Pinyin System. (Huang & Liao, 2007)*

Vowels	10 single vowels (dān yùn mǔ 单韵母)	a, o, e, i, i (after [zh], [ch], [sh], [r]), and i (after [z], [c], [s]), ê, u, ü, er
	13 compound vowels (fù yùn mǔ 复韵母)	ai, ei, ui, ao, ou, iu, ia, ua, ie(iê), üe(üê), iao, iou, uai
	16 nasal compounds	an, ang, en, eng, ong, in, ing, ün, ian, iang, iong, uan, uen, uang, ueng, üan

	(bí yùn mǔ 鼻韵母)
Consonants	b, p, m, f, d, t, n, l, g, k, h, j, q, x, zh, ch, sh, r, z, c, s, ng

The number of vowels and consonants in Chinese is quite large. Stress and intonation patterns are also different in Chinese and English. Therefore, in my research, the distinction and pronunciation of different tones was not the only challenge experienced by the learners in the oral expressions of Chinese. Some vowels and consonants of Chinese have a very different pronunciation in English (“q”, “x” and “e”), which prevented the non-background learners in my research from pronouncing the *pinyin* correctly.

The pronunciation of “q” in Chinese is similar to the phonetic symbol [tʃ], while in English, it is pronounced as [kw]. As “q” is widely used in Chinese (“qī 七” [seven], “qiú 球” [ball], “qù 去” [go], and “quē 缺” [lack]), the articulation of this consonant becomes important. The difficulty of pronouncing “q” is a common problem in the whole class. Particularly, it was mentioned by Robbin in the focus group discussion.

*My story is about my favourite things. I wrote about soccer and rugby. But they are hard to say. [“zú qiú (soccer)”] I can say the first word, but the second one is hard to pronounce. The “q” in Chinese is totally different from the “q” in English. (Robbin, focus group discussion)*

Jason shared the same concern. In his weekly reflection in Week 9, he reported:

*My story is about a trip to the Blue Mountains. I wrote the weather is sunny. “qíng tiān (sunny)” is a little bit hard for me to pronounce because of the “q”. We don’t say the “q” in that way in English (Jason, students’ weekly reflection)*

Jason encountered the same challenge as Robbin when he was narrating his digital story. The students’ narration shows that most of the students who applied “q” in their story pronounced it in the way “q” is pronounced in English, which is not correct.

Besides “q”, I realised that the consonant “x” and the vowel “e” were not easy for the students to articulate either. In Week 9, I had one-to-one conferences with participants to help them in creating their digital stories using as many Chinese words as possible. More than half of the students said they were not able to say the word “xǐ huān 喜欢” [like] as they did not know the pronunciation of consonant “x”. “x” is pronounced like the phonetic symbol [ʃ] in Chinese, but in English, the pronunciation is [ks]. The word “xǐ huān 喜欢” [like] could be extensively used in students’ Chinese digital stories related to favourite sports or favourite animal or family members. Therefore, it was an important word in their digital stories. I told students the pronunciation of the consonant “x” was similar to the “sh” in the word “sheep”. This method worked out quite well after I listened to their audios in the PPT.

Another difficulty was the vowel “e”. It was used in the stories about family as it appeared in the word “hé 和” [with] and “gē gē 哥哥” [older brother]. Ella and Gloria both referred to this vowel in the one-to-one conference in Week 9. They both pronounced this vowel as [e], which is the same as the vowel in the word “bed”. In fact, this vowel is similar to phonetic symbol [ə] in English.

Non-background learners’ wrong pronunciation of “q”, “x” and “e” was brought by the influence of their first language or already acquired language, which was English in my context. It is called the negative transfer of language (Odlin, 2012). According to Odlin, for English speaking learners, this negative transfer in CFL learning is inevitable because there are many differences between target language (Chinese) and source language (English). However, it can be reduced by repeated memorisation and frequently usage (Krashen, 1982). In my study, I pronounced “q”, “x” and “e” for the participants when they did not know how to pronounce them or pronounced them wrongly. I also asked them to practise the pronunciations frequently to deepen their memorisation. However, it probably occurred only once for the particular slide a particular student needed. Hence, my teaching and learning sequences did not cater enough

time for students to practice pronouncing these varied consonants and vowels. Therefore, in my study, this negative transfer was magnified due to limited timeframe given for the participants to learn Chinese.

### ***5.3.1.3 Lack of connection between the written character and its pronunciation***

Kane (2006) and McLaren and Bettinson (2015) raised the concern that the written Chinese character gives few clues as to how it may be pronounced, which impedes CFL learners' learning process. As the character does not directly reflect its pronunciation, the *pinyin* system was invented to assist the articulation of each character (Odinye, 2012). However, as Chinese does not have an alphabet but uses a logographic system for its written language, this fundamental difference leads to the situation where non-background learners of Chinese may have great difficulty reading Chinese texts.

The commonly cited research on the lack of connection between the Chinese written character and its pronunciation is evident in my data. In Week 9, when the students were asked to finish their digital stories, I had one-to-one conferences with participants in class to help the narration of their stories. Most of them insisted that the oral expression of Chinese was difficult. Six of them referred to the difficulties of building a connection between *pinyin* and characters, which resulted from the ideographic nature of Chinese. Wendy was confused about why a certain character should be said in that *pinyin*. She gave me an example in class:

*How can I remember the pronunciation of each character? Look at this one, “妹妹” [younger sister], there is no sign in the character that remind me the pronunciation is “mèi mèi”.*

Wendy's question shows that she could not find the connection between *pinyin* and the Chinese characters, which became a challenge in her narration of the digital story. Her description echoed the argument that the Chinese characters do not provide consistent information about pronunciation, and the pronunciation cannot be derived from merely looking at the characters

(Kane, 2006; McLaren & Bettinson, 2015). Wendy was not the only student who had this kind of confusion. Another student, by the name of Dylan, made a comparison between English and Chinese:

*In English, we have sound mark [he means the International Phonetic Alphabet (IPA)] to let us know how to say a word. In Chinese, they have pinyin. But what is the relationship between pinyin and character?*

Dylan could understand the connection between English words and IPA, but he had no idea of the relationship between *pinyin* and Chinese characters. It confused him when he was writing down the *pinyin* and characters of his story, which thus influenced his speaking of Chinese in this project. Robbin was also puzzled by the lack of connection between *pinyin* and character. He said that the character and its *pinyin* looked so different, and he could not recall the *pinyin* when he saw a character:

*When I see this character, I cannot think of its pinyin.*

These three students were all cognitively engaged to figure out the relationship between *pinyin* and Chinese characters. Their confusion could be attributed to the fact that the Chinese characters do not directly reflect the *pinyin*, which slows the process of learning Chinese.

Ella put forward this difficulty directly in the weekly reflection:

*I don't think I will remember the pronunciation of a word if you cover its pinyin. (Ella, students' weekly reflection)*

She made it clear that she was not able to speak out the *pinyin* by just looking at the character.

This kind of perspective also occurred in the focus group discussion:

*When I was writing pinyin and words to my storyboard, I keep thinking why this word should be said in that way and I tried hard to find the relation between these two. I look the shape of the character and each line [he means stroke] in it but I can't find the message that shows its pronunciation. (Robbin, focus group discussion)*

Robbin was trying hard to make a connection between *pinyin* and characters to help his oral expressions of Chinese. However, the attempt failed as there was no certain relation between *pinyin* and Chinese characters (Kane, 2006; McLaren & Bettinson, 2015; Odinye, 2012). My study reinforced Orton’s (2008) report on the difficulties brought about by the ideographic nature of Chinese when non-background learners were learning Chinese as a second language. Non-background learners were advised to undertake 2,220 hours of study to master Chinese according to the U.S. Foreign Service Institute. However, given the limited timeframe of 10 weeks with 1 hour per week, it was not surprising that my participants could not tell the *pinyin* when they saw a character.

In the focus group discussion, I asked the five participants, “Did you find out the connection between *pinyin* and Chinese characters when you wrote down the script on your storyboard?” Both Ella and Alice confirmed that there was no such a relation. Their original conversation is shown in Table 5.2.

Table 5.2. *Excerpt of Students’ Attitude to the Ideographic Nature of Chinese Language*

**Alice:** I think there is no relation between pinyin and characters. I examine every word in my story but I find nothing. I can try to speak out my digital story by looking at the pinyin, but I can’t do it by just looking at the characters.

**Ella:** I agree with her. My story is about my family and I find that the pinyin of “eight” [bā] is similar to the pinyin of “father” [bà bà]. [The tones are different.] But the characters of “eight” and “father” have nothing in common. I can’t image their pronunciations are similar if I just look at these two words. So I think pinyin and characters are two different systems and they have no connection with each other.

Despite such a widely-cited difficulty, the participants still managed to finish their digital stories, which shows learners’ learning motivation in this DST project. In Week 10, the participants were required to present their own digital stories in class, I was able to see their improvement in the aspect of oral expressions. However, in the assessment sheets, no participant got the level “Excellent” in the section of “Voice pace” that included rhythm and



pronunciation. Participants would get an “Excellent” if their voice pace fit the story line and helped the audience really “get into” the story. This result demonstrates that the oral expression of Chinese was a challenge for students. They could not pronounce their digital stories in Chinese accurately, not to mention controlling the voice pace to fit their stories and narrating their own stories with feelings.

### **5.3.2 Chinese writing system**

The oral expression of Chinese was difficult in my study, but at least *pinyin* is made of the alphabet, which students were familiar with. From this aspect, the non-background learners were unacquainted with the Chinese characters in my research, as the Chinese writing system is not based on the alphabet. The alphabet consists of a small number of letters. The letters represent sounds but do not have any meaning by themselves. However, a Chinese character is a more complex unit. It contains an indication of meaning. There are more than 100,000 different Chinese characters. It is actually impossible to count them all precisely (Huang & Liao, 2007). The number of useful characters for a literate person, however, is “only” between 3,000 and 6,000 (Li, 2015). That is still a huge number compared to the 26 letters in English. Given the fact that the students had received relatively little input in the Chinese writing system compared to the time spent learning English, it was not surprising that they had no idea of what a stroke was and the order of strokes.

Kenner, Kress, Al-Khatib, Kam, and Tsai (2004) pointed out that the key characteristic that differentiates Chinese writing from English is that the former is a mainly logographic system while the latter is alphabetic. This major difference in the writing system also placed a challenge on the writing of Chinese characters in my research. In Week 9, when I asked students for the biggest challenge they had encountered during the digital story-making process, the writing of Chinese characters was emphasised. In my interactions with the students, they used “draw” to refer to their Chinese writing. Fiona, one of the students who regarded writing

Chinese characters as a challenge, complained that her “drawing” was ugly and the characters she wrote did not look like the ones I taught her when she was preparing her storyboard (see figure 5.3). She also considered Chinese characters to be harder than *pinyin*. In that week, Fiona expressed, “Now I changed my mind, compared to characters, the tones and *pinyin* are nothing”. This was a contrast from her statement in Week 8 when she was practising the *pinyin* of her story. Despite her steep learning curve in mastering *pinyin* and Chinese writing system, Fiona managed to complete her digital story by Week 10.

Similar experience was felt by other students. Gloria had a different way of expressing that the Chinese characters were more difficult than *pinyin*: “Sometimes I can guess the pronunciation of a certain *pinyin*, but when I see the character, I am totally lost”. Both Fiona and Gloria emphasised the difficulty of character writing in my research. However, they still cognitively and physically engaged in making their own Chinese digital stories while their emotional feelings were dropped during this time.

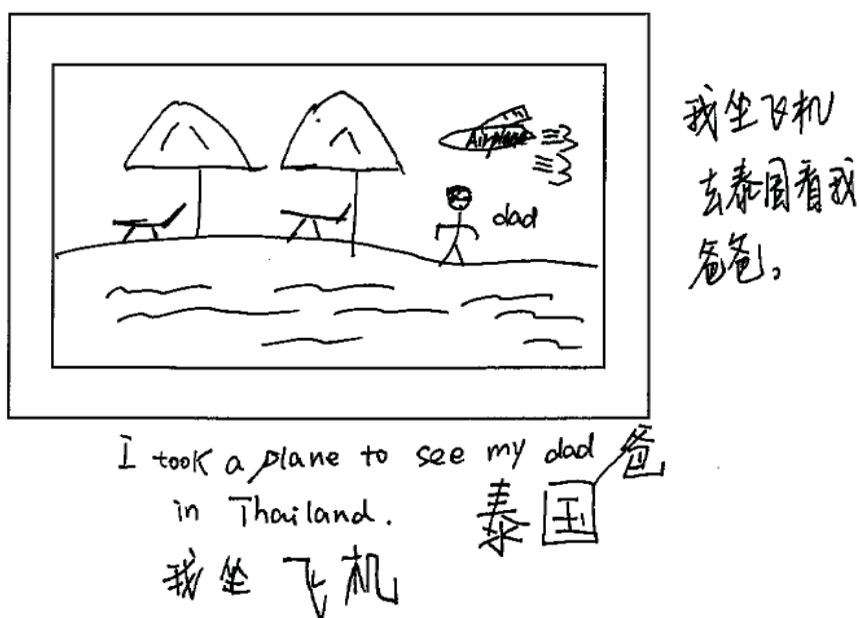


Figure 5.3. Fiona’s storyboard.

After analysing the current situation of CFL education in Australian schools, Orton (2008, 2016b) pointed out that one of the challenges Australian students face in learning Chinese is writing characters. Orton's finding resonates with Kenner et al. (2004) who explained that the difficulty in writing Chinese results from its logographic writing system, which is different from the alphabetic system of English. In the logographic writing system of Chinese, there is a stroke system that contains five types of basic strokes and the learner needs to follow the order of strokes to write a character (Huang & Liao, 2007). With such a complicated writing system, no wonder the participants who had only received 10 hours' study complained the difficulties of writing Chinese characters.

Despite what the majority of the students said about what they liked about DST in their lessons (see section 4.3.3), there were negative opinions related to the difficulties in writing Chinese texts in students' weekly reflections. Take Ken's reflection as an example:

*Writing Chinese is difficult. I need to focus on one word all the time when I am drawing it or I will not be able to find out which lines I draw and which lines I don't draw. (Ken, students' weekly reflection)*

What Ella shared in the focus group discussion was in line with Ken's reflection:

*The Chinese characters have so many lines. I don't know which line to draw first and which line is the next. As I don't know the answer to this issue, the result is I don't know what to do when I see a character. (Ella, focus group discussion)*

The students' responses indicate that they did not learn the Chinese writing system systematically because they used "lines" instead of "strokes", they used "which lines to draw first" instead of "the order of strokes", and more importantly, they used the verb "draw" instead of "write". As the non-background learners were unfamiliar with the logographic writing system of Chinese, no participant would be aware that they need to follow the order to write a character.

Writing Chinese characters was a challenging task for the participants in my study. Their enthusiasm in creating digital stories reduced in Week 9 because in that week, I involved them in writing the Chinese words on their storyboards. However, when their digital stories were completed, they admitted that writing Chinese characters was as an effective method to help them remember the words better as it allowed them learning by doing. Although the characters they wrote in their storyboards were very simple and some sentences had grammatical errors, their attempt was comforting. Meanwhile, the participants would appreciate more time to master the writing system of Chinese, but it was not applicable in my study due to the limited timeframe.

#### **5.4 Summary of the Chapter**

Scrimgeour (2013) highlighted the difficulty of learning Chinese by regarding it as one of the most difficult second languages to learn from the perspective of users of alphabetic writing systems. In the context of applying DST to teach Chinese to non-background learners, my participants not only encountered the difficulties related to the linguistic characteristics of Chinese, they also met technical difficulties in using PPT to create digital stories. Despite the technical difficulties and linguistic difficulties, students acknowledged that DST was an effective and innovative method of learning Chinese for them. These challenges are commonly cited in other studies that engage students in using technology that is new to the research participants and limited time was given for them to learn an additional language.

The two key challenges could be attributed to the limited timeframe in my study. If more time was dedicated to the teaching of Chinese using DST, my participants could have more time to familiarise themselves with the PPT-making skills and overcome the linguistic difficulties of Chinese.

With these challenges in mind, I now describe the scaffolding strategies I put in place to address the linguistic difficulties reported by the students. Chapter 6 focuses on applying appropriate scaffolding strategies to make Chinese learnable for my research participants.

## CHAPTER 6:

### Scaffolding Strategies Used in Digital Storytelling in CFL Education

#### 6.1 Introduction

In Chapter 4, I highlighted that DST is an effective approach to enhance students' retention of Chinese vocabulary and to promote students' cognitive investment, active participation and emotional engagement in the learning process. Such affordances were not experienced without any challenge. In Chapter 5, I identified two main challenges students encountered in their process of making Chinese digital stories, namely, learners' overemphasis on technical aspects and the linguistic characteristics of Chinese language. In order to help the participants overcome the challenges and make Chinese learnable, I needed to employ appropriate scaffolding strategies in the Chinese language classes. In this final evidentiary chapter, I retrospectively examine the strategies that scaffolded students' ability to create digital stories by using the Chinese vocabulary they had learnt. The analysis was based on iterative comparisons between the codes from the participant observation, focus group discussion, and students' artefacts.

Vygotsky (1978) used the concept "internalisation" to describe the process in which scaffolding leads to development. However, Mascolo (2005) noted that this metaphor does not adequately explain children's behaviour in order to benefit from the scaffolding provided by tutors. In Chapter 2, I discussed the concept of "coactive scaffolding" put forward by Mascolo. When I was analysing the data, I found his perspective fitting to categorise the scaffolding strategies that I had applied to the participants. Therefore, to illuminate the insights I gained from my coding, I drew on this concept to identify the useful scaffolding strategies that made Chinese learnable when non-background learners created digital stories to develop their Chinese language skills. Mascolo clarified that there are three broad categories of coactive scaffolding: (1) social scaffolding, (2) ecological scaffolding, and (3) self-scaffolding (see

section 2.4 for definitions). In the remaining parts of this chapter, I discuss how social scaffolding and ecological scaffolding were implemented in my study. Self-scaffolding was not evident in my data and hence, it will not be discussed in my thesis.

## **6.2 Social Scaffolding**

In Chapter 2, I described “social scaffolding” as “the processes by which co-regulated exchanges with other persons’ direct development in novel directions” (Mascolo, 2005, p. 189). According to Mascolo, there are seven forms of coactive interaction and support that occur in social exchanges (refer to Table 2.1). In this section, I present my findings from the lowest level (CS1) to the highest level (CS7) based on the evidence from my data. However, CS3 and CS7 were not evident in my data. Definitions of each level of scaffolding are also provided in my discussion.

Mascolo’s levels of co-regulated interaction and support work best in moment-by-moment analysis when the interactions are recorded and analysed. The moment-by-moment analysis can illuminate “how subtle and non-obvious coactions among system elements can create novel ways of thinking, acting and feeling in real time” (Mascolo, 2005, p. 187). Nevertheless, in the context of my study, I was not able to record the audio or video in Chinese lessons due to the lack of access to technical resources and support. Therefore, the participant observation became the firsthand evidence of recording in the Chinese lessons. In class, I recorded key interactions with students that might have led to a task achieved or a language skill attained in the participant observation form. This method allowed me to examine the effectiveness of different scaffolding strategies in making Chinese learnable in the process of making digital stories.

### **6.2.1 Encouragement and praise**

As illustrated in Table 2.1, encouragement and praise (CS1) is the lowest level of social scaffolding. At this level, the teacher provides no instruction but verbal encouragement (e.g.,

“You can do it!”) or praise (e.g., “Well done!”). Mascolo (2005) also clarified that the novice is more responsible for deploying a given skill when being praised or encouraged by the teacher. In my study, I found myself using encouragement and praise (CS1) which benefited the students in their Chinese language learning. Based on my analysis, this level of social scaffolding was most evident when the participants first started to pronounce *pinyin* and write the characters.

#### ***6.2.1.1 Encouragement and praise (CS1) in pronouncing the pinyin***

In terms of *pinyin* pronunciation, encouragement and praise (CS1) contributed to the building of confidence in speaking Chinese words. Week 9 was the last lesson before the final presentation of digital stories. I planned to have one-to-one conferences with each participant to check on their pronunciation and help them narrate their stories in Chinese. I organised the conferences with students based on their seat order. When I was conferencing with a student, the other students were trying to complete their digital stories. However, I had conferences with only 18 out of 32 participants due to the limited lesson time. Among the 18 students, five expressed that *pinyin* was difficult for them to pronounce.

Based on my participant observations, I remembered Gloria and Alice had expressed their initial difficulty in the oral expression of Chinese (see section 5.3.1). In Week 9, Gloria told me that she could not say the *pinyin* of her story: “*It is just hard to make the sound*”. Initially, I assumed that Gloria, being a hardworking student, should know the pronunciation of these words and all that she lacked was confidence. Thus, I said, “Try to pronounce the first three words. I know you can do it!” After a 20-second hesitation, she said, “*wǒ xǐ huān 我喜欢*” [I like] in a very low voice. Her articulation was quite accurate and in response to her good attempt, I told her, “Your pronunciation is really good but I hope you can say it in a big voice”. She seemed very cheerful after hearing my praise and began to practice speaking the rest of *pinyin* immediately.



Gloria was not the only student who was able to read the *pinyin* more confidently after receiving my encouragement and praise in Week 9. Alice, a girl migrated from Philippines, could speak better Chinese than her classmates. She kept asking me whether she had read the *pinyin* correctly. She was seeking my affirmation despite her accurate *pinyin* articulation. Her behaviour indicated her lack of self-confidence in pronouncing *pinyin*. When I told her that her pronunciation was excellent and she should be confident of her *pinyin* articulation, Alice smiled and promised me that she would practise more to perfect her *pinyin* articulation.

These two girls' performances in the one-to-one conference made me realise that encouragement and praise (CS1) from me could make a big difference to my students' Chinese language learning. Gloria also reflected in her weekly reflection that the encouragement from me gave her much confidence:

*At first, I don't want to say the pinyin of my story because I don't know [whether] I say it correctly. Miss Fu told me that the sound I make is right and I am so happy. Now I think I can say my story in Chinese. (Gloria, students' weekly reflection)*

Her description proved that my observation of her facial expression in Week 9 was correct. She became more confident to pronounce the *pinyin* after my encouragement and praise, which promoted her CFL learning process. In the focus group discussion, participants also expressed that my encouragement had built their confidence in the oral expressions of Chinese. For instance, Alice claimed that my use of encouragement and praise (CS1) had built her confidence in pronouncing *pinyin* correctly:

*I am always not sure about my pronunciation although I think my one is similar to the audio you gave us. I still can't make sure that my one is correct. Then you told me my pronunciation is better and correct. I was so excited. I realise that I worry so many things that are unnecessary. I think I gain more self-confidence in the Chinese learning. (Alice, focus group discussion)*

Her answer indicates that the encouragement and praise (CS1) from me increased her self-assurance by beginning to ignore the unnecessary worries, which was helpful to her Chinese language learning process.

As mentioned earlier, there were 14 students who did not have the one-to-one conference with me in Week 9. Even though I did not have a chance to check their work in the conference, I still encouraged and praised them throughout the learning sequences as I would say words like “I believe all of you can make perfect stories” and “you speak Chinese pretty good” to the whole class at the end of every lesson. An analysis of the students’ digital stories shows that encouragement and praise had a positive influence on the students’ confidence to recite their digital stories. I was pleased that half of my students were able to recite their digital stories loudly and clearly and exuded confidence in using Chinese. Despite the common complaint about their difficulty in speaking and writing Chinese (see sections 5.3.1 and 5.3.2), all my students were able to finish their Chinese digital stories, including Richard, a student struggled to pronounce the Chinese words correctly. In Chapter 5, I described Richard’s challenge in distinguishing different tones in Chinese (see section 5.3.1). Despite the difficulty he had while producing the Chinese digital story, in the focus group discussion, Richard claimed that he was motivated by my encouragement: *“I feel really cool when I was praised by Miss Fu and I believe I can make it”*. His words made it clear that the praise from me gave him more motivation and confidence to complete the task.

Despite the limited time in learning Chinese using DST, I was pleased that my encouragement and praise had helped the students produce at least a decent draft of a complete digital story that had a proper introduction, main body, and conclusion. The students’ digital stories showed different levels of competency in regard to pronouncing the *pinyin*. Nevertheless, the 10 weeks’ Chinese learning experiences had provided them the opportunity

to enhance the retention of Chinese vocabulary and engage themselves in the language learning process.

Lim et al. (2003) highlighted the importance of creating a conducive environment in supporting language learning as it makes the learner task-oriented and more engaged in the learning process. Mascolo's (2005) advocacy for encouragement and praise (CS1) is necessary for creating a conducive environment for learning. Literature from educational psychology has proven that verbal encouragement and praise reinforce positive learning behaviours by inspiring learners' learning motivation and engaging them in the learning process (Ormrod, 2014). Therefore, in my study, it was evident that my encouragement had helped to create a conducive learning environment the non-background learners were motivated to participate actively in the learning process without feeling intimidated.

#### ***6.2.1.2 Encouragement and praise (CS1) in writing the characters***

According to my analysis of different types of data, I found that encouragement and praise (CS1) were not only beneficial in encouraging my students in pronouncing the *pinyin* as correctly as possible, but also effective in teaching them to write the Chinese characters. In Chapter 5, I highlighted that the logographic writing system of Chinese posed a difficulty in making Chinese digital stories for my participants (see section 5.3.2). These difficulties in my study were expected as the participants had limited past experiences of learning Chinese. And these challenges can be overcome when the learners have enough time to familiarise themselves with the Chinese writing system and practise writing Chinese characters (Scrimgeour, 2013).

The participants in my study were not familiar with the Chinese characters before they began this DST project because they had not learnt the Chinese writing system systematically. This unfamiliarity resulted in students' unwillingness to write characters during the digital story-making process. The aim of Week 8 lesson was to shift from storyboarding to creating digital stories using PPT. Prior to this step, I gave students the stripes that contained *pinyin*,

characters, and English translation to help their *pinyin* pronunciation and character writing. However, the participant observation in that week suggests that about 15 participants were not willing to write the characters because of the complexity of characters. For instance, Wendy told me that she had no idea of how she should begin to “draw” these characters: “*I am totally lost when I see them*”. Concerned that my students might be intimidated by the unfamiliar characters. I decided to encourage them to have a go. I picked one simple character (“qī, 七” [seven]) in Wendy’s story and asked her to write it down on her storyboard. At the same time, I told her that this character was very easy because it only had two strokes. I also said, “I believe you can do a good job”. After a short hesitation, she wrote this character on the paper. Although her writing was not perfect, it is recognisable. I expressed my praise (“Well done!”) to her and hoped she could do even better when writing the rest of characters. She laughed and responded that she would try her best to do this assignment. My participant observation showed that Wendy’s pressure of writing unfamiliar characters was lifted at the moment I praised her writing.

In the following week (Week 9), when I had one-to-one conference with the participants, Robbin told me with an upset face that he did not want to write the characters: “*They are difficult for me to copy*”. Robbin was the one who tried hard to find out the connection between *pinyin* and characters but failed at the end. To cheer him up, I intended to use the method I had applied with Wendy the week before. I picked the simplest and most frequently occurring word (打 in “打游戏 dǎ yóu xì” [play games]) from his story and encouraged him to write it on his storyboard regardless of the order of strokes. After he had done that, I praised his behaviour (“You did a good job!”) and continued to encourage him to create his digital story on PPT. However, Robbin expressed his anxiety for not being able to finish this work. Then I conveyed my trust in him to build up his confidence. Finally, he promised me that he would try to do the task.

Nevertheless, the verbal agreement from the participant was not reliable enough to testify the effectiveness of encouragement and praise (CS1) in making Chinese learnable to my participants. Therefore, I decided to look for evidence from students' weekly reflections. Take Wendy's reflection as an example:

*I have never written the Chinese characters before and I don't think I can do it. Luckily, Miss Fu choose an easy one "seven" in my story and let me draw it. She said my writing is good. After that, I feel like I am able to draw all the characters from my story. (Wendy, students' weekly reflection)*

Wendy's own words manifests that she became more willing to write the characters after my encouragement and praise. She also obtained confidence and interest in writing characters, which were important in keeping the enthusiasm in learning Chinese. Fiona's reflection was in line with Wendy's description. As presented in Chapter 5, Fiona emphasised the difficulty of writing Chinese words in Week 9 (see section 5.3.2):

*My story has many characters. At first, I just select some easy ones to write. I think my writing is kind of weird. But Miss said the characters I write are quite good. I'm so happy to hear that. Now I plan to write the difficult ones. (Fiona, students' weekly reflection)*

Fiona did not dare to write the complicated characters in her story at the beginning, so she chose some simple characters to start. Then I came across her and saw her writing. Her writing was acceptable. Therefore, I took advantage of the encouragement and praise strategy again to strengthen her confidence in Chinese language learning. From her reflection, I knew that she had gained the courage of challenging the complicated characters after my encouragement, which was a significant progress in her learning process.

I noted that Robbin did not write anything about encouragement and praise (CS1) from me in his reflection. So in the focus group discussion, I asked him "are you still reluctant to write the Chinese characters?" Robbin shared:

*I have to say I don't like writing Chinese characters at all at first. I think they are weird. After you ask me to write the "dǎ", I begin to write them reluctantly. But little by little, I find that drawing these characters is somewhat interesting. When I finish one character, I am eager to write the next one. It is just like playing computer games. I complete one level and go to a higher level. So I think now I am willing to write the Chinese characters. (Robbin, focus group discussion)*

Robbin's response indicates that his emotional engagement about writing characters had increased after the encouragement and praise (CS1) from me, which demonstrates that this strategy was beneficial to reach the educational affordances of DST in my study (see section 4.3.3). He began to enjoy the process of writing characters after he was encouraged by me to write the first character.

A further analysis of the students' artefacts suggests my encouragement and praise (CS1) had motivated them to apply the newly learnt words. For instance, at the beginning, Wendy was lost when she saw the characters, then I encouraged her to write the easy character “七” [seven]. After that, she was using the empty space on the storyboard to practise writing this character iteratively. Thus, Wendy's storyboard was full of the character “七”.

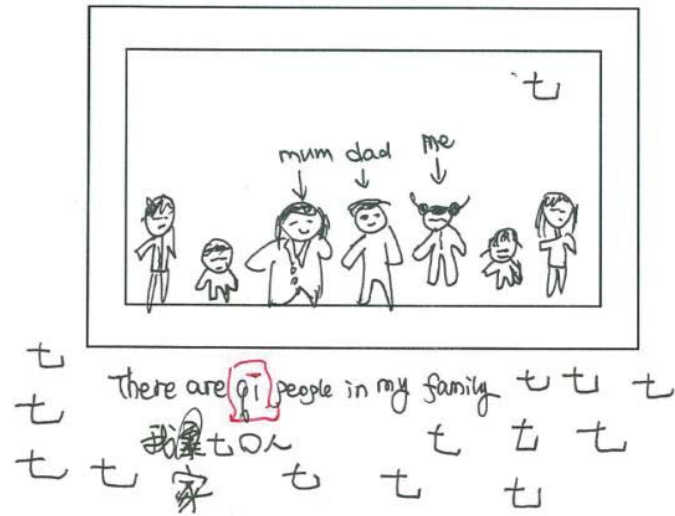


Figure 6.1. Wendy's storyboard.

Robbin shared in the focus group discussion that writing Chinese characters was like playing computer games. In his storyboard (Figure 6.2), he wrote each phrase (“wǒ xǐ huān 我喜欢” [I like] and “dǎ yóu xì 打游戏” [play games] at least twice until he remembered how to write them in Chinese. This was the same attitude as when he had tried to perform perfectly to complete a certain level in his computer games.

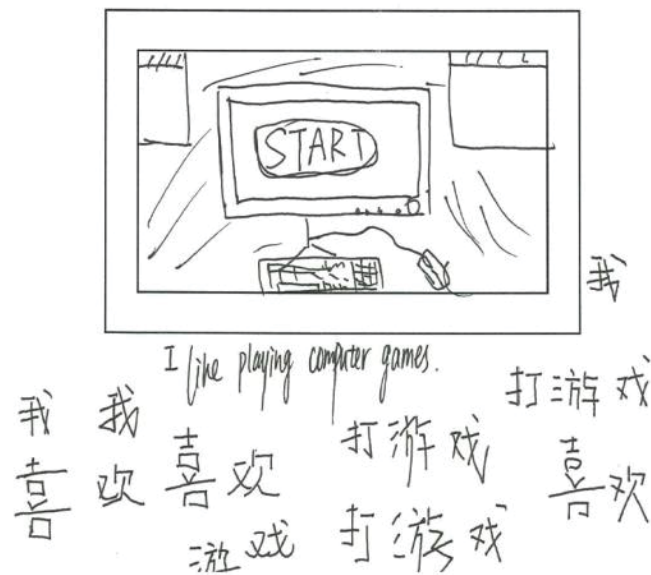


Figure 6.2. Robbin's storyboard.

My data show that the main advantage of this strategy is motivating my students to practise pronouncing *pinyin* as correctly as possible and writing characters. Orton (2010, 2016b) argued that when Australian students were learning Chinese as a second language, low motivation was an obstructive factor that hinders high classroom involvement and learners' language development. Knowing that the reported factor could happen in my study when students encountered difficulties in making Chinese digital stories, I applied encouragement and praise (CS1) to inspire learners' learning motivation and enhance engagement in Chinese language lessons. Therefore, it could be seen that encouragement and praise (CS1) helped to make Chinese learnable to non-background learners in my study when creating digital stories to develop their language skills.

Similar to Mascolo's (2005) research, the use of encouragement and praise (CS1) enabled children to execute a skill by themselves. It increases the learner's confidence and gives the learner the additional "push" to do something which he or she regards as impossible. Mascolo provided an example of an adult encouraging the child to throw a ball into the basket unassisted by saying "You can do it!" or "Throw it in!". In my case, I initiated the same encouraging gesture when I said "I believe you can do a good job.", "Well done!" and "You did a good job!" to my students. Such simple encouragement and praise (CS1) had built learners' confidence in writing Chinese characters and developed their character-writing skills.

### **6.2.2 Sequential modelling and imitation**

The level above encouragement and praise (CS1) is sequential modelling and imitation (CS2). Both CS1 and CS2 are positioned as the lower levels of social scaffolding in Mascolo's (2005) levels of co-regulated interaction and support. Mascolo explained that in sequential modelling and imitation (CS2), "novice imitates modelled action *after* the modelling is completed and *without* further support" (p. 188). This definition has two emphases, namely, (1) the learners imitate the action only when the modelling from the teacher is finished, and (2)



the teacher will not offer any further help to learners after the modelling. In my study, after the analysis of various data, sequential modelling and imitation (CS2) was found to be effective when the participants were practising *pinyin* and writing characters.

#### **6.2.2.1 Sequential modelling and imitation (CS2) in pronouncing the *pinyin***

In Week 9, I organised one-to-one conferences (see section 6.2.1.1) in my lesson. My intention was to help students in the final presentation of their digital stories. However, in addition to my original intention, my data show that this turned out to be a learning opportunity to provide sequential modelling and imitation (CS2) for them to pronounce the *pinyin*. I drew on my data collected in Week 9 to discuss the importance of sequential modelling and imitation (CS2) and highlight key incidents from my participant observations to support my arguments.

To discuss my findings, I used illustrative examples from my classroom interactions with Jason and Cathy. According to the participant observation of Week 9, when I came to Jason for his conference, he asked me for guidance in teaching him to pronounce all the *pinyin* in his story. Jason's story was about a trip to the Blue Mountains, and I noticed that there were too many new words in his story. Thus, I modelled the pronunciation of “kuài lè 快乐” [happy], “tàn suǒ 探索” [explore], and “bēn pǎo 奔跑” [run] and encouraged him to repeat after me, word for word. At first, his pronunciation was not accurate enough, but gradually he could pronounce the words in fairly accurate tones. After the one-to-one conference, I observed that he was practising pronouncing the *pinyin* of his story by himself in the remaining part of the lesson. The other student with whom I spent a substantial amount of time correcting pronunciation of *pinyin* was Cathy, who reported the difficulty of distinguishing four tones in Chinese (see section 5.3.1.1). During the individual conference, I pronounced all the *pinyin* in her story for her. I pronounced the *pinyin* phrase by phrase, and after one phrase was finished, I let her repeat the phrase in Chinese. She struggled to complete the pronunciation of the whole

story. Despite praising her for her effort in practising *pinyin*, she said, “*But I still cannot make it myself*”.

Although Cathy doubted her ability of pronouncing the *pinyin* correctly by herself in that lesson, her reflection shows that she did remember some of the *pinyin* after my sequential modelling and imitation (CS2):

*Miss Fu shows me the sound of each pinyin in my story when we are having small meeting. At first, I think this method could only be useful in 5 or 10 minutes. So I'm worrying about how I can say the words when she is not by my side. But luckily, when I look at my story at a second time, I still get some of the memory of the pinyin. I can still say some of the words. (Cathy, students' weekly reflection)*

Other students, like Cathy, were able to recall the pronunciation when they were practising *pinyin* alone. This was due to the sequential modelling and imitation (CS2) that took place during the conferences. Wendy's reflection epitomised the common perception for these scaffolds I provided:

*When I try to make the sound by myself, I am always not sure I pronounce the pinyin correct or not. But after Miss Fu shows me the correct sound in Chinese; I have a memory of the correct sound so I know I say some of the pinyin in the wrong way and some of the pinyin in right way. I think my speaking become better after she pronounce some of the difficult pinyin for me. (Wendy, students' weekly reflection)*

Wendy asked me about the writing of characters in Week 8's lesson (see section 6.2.1.2). She started to accept the writing of characters with the certain character “七, qī” [seven]. This time, after I had applied sequential modelling and imitation (CS2) in her *pinyin* pronunciation, she was able to distinguish whether it was the correct sound of a certain *pinyin* (only applied to the circumstance that this *pinyin* was from her own story), which was an advanced progress in her Chinese language learning process.

The other student who needed more scaffolding from me was Jason. In the focus group discussion, I asked students how they felt about the individual conferences I had with them. Jason responded that he found it useful in providing him with the feedback and timely correction on the spot:

*It is helpful to my learning. I can have an idea of whether I say the word in the right way and I can know the pronunciation of some difficult words clearly. (Jason, focus group discussion)*

The effectiveness of using sequential modelling and imitation (CS2) in helping students pronounce *pinyin* correctly was pointed out by Richard, who used the word “imitation” in his answer in the focus group discussion:

*I agree with him. The imitation is useful. It helps my own pronunciation of the pinyin. Your pronunciation is the most correct because you are from China. I imitate you; it allows me to know the real Chinese. (Richard, focus group discussion)*

Richard’s thought was different from Jason’s, but it also supported the perspective that sequential modelling and imitation (CS2) was beneficial in Chinese language learners’ language acquisition process. Richard focused more on the authentic pronunciation he could gain from my sequential modelling and imitation (CS2).

In my study, the students who did not have the conference with me also received sequential modelling and imitation (CS2) in class as I modelled the pronunciation of the words in the vocabulary list (Table 3.1) to the whole class in Week 7. In Chapter 5, I mentioned the difficulties in oral expressions of Chinese for non-background learners, including distinguishing and pronouncing different tones and articulating the vowels and consonants that have different pronunciation in English. However, during the presentation of students’ digital stories, I found that they pronounced the words from vocabulary list much more accurate than the other words in their stories.

This finding was supported by Hao's (2012) argument. After analysing the three different types of speaking tasks (Identification, Mimicry and Reading) done by learners, Hao (2012) came to the conclusion that beginning language learners are significantly better at mimicking sounds than at identifying or reading them. Sequential modelling and imitation (CS2) provide learners with an opportunity to mimic the pronunciation from me and help them overcome the challenges in speaking Chinese. Thus, this scaffolding strategy is effective in helping students make the correct sound of *pinyin* that is needed to allow them reading Chinese words or expressing themselves orally in Chinese.

#### ***6.2.2.2 Sequential modelling and imitation (CS2) in writing the characters***

Just like encouragement and praise (CS1), sequential modelling and imitation (CS2) were effective in character writing as well. As for simple characters with fewer than five strokes, students could be motivated to have a go by encouragement. However, I could only persuade the students to write the complicated characters with more than five strokes by writing down the characters for them first and let them mimic my writing.

In the one-to-one conferences of Week 9, some students were more interested in learning how to write characters. Ken was one of the students who wanted to learn the writing of characters. He reported that writing Chinese characters was so difficult as he had to focus on one character all the time (see section 5.3.2). The participant observation of that week shows that Ken was reluctant to write down the characters at the beginning. Learning from my experience with Jason, I wrote down some characters in his storyboard for him and let him imitate the words I wrote. Together, with the assistance of encouragement, Ken began to write the characters little by little. Although his progress was slow, he was trying hard to write the characters, which was helpful in developing his language skills. In Ken's reflection, I found that he responded well to sequential modelling and imitation (CS2).

*In fact, I kind of like the Chinese characters and I hope I can draw many of them one day. But when I first see them, I was kind of lost. I don't know how to start. Miss Fu write some characters for me. Thanks to her teaching, I can write some characters by myself. (Ken, students' weekly reflection)*

Ken's reflection demonstrates that he had learnt how to write a character from sequential modelling and imitation (CS2). The scaffolding I had put in place resulted in Ken's growing fondness of writing characters. And this emotional engagement led to his cognitive investment and active participation in class. Therefore, it was evident that sequential modelling and imitation (CS2) benefits learners' Chinese language learning in term of writing characters.

In Chapter 5, I raised the concern that the logographic writing system of Chinese hindered students' process of making Chinese digital stories (see section 5.3.2). However, there were students who believed this challenge could be overcome. For instance, Martin recounted that his experience of imitating my writing made him realise that characters were not as difficult as he thought before. In Martin's reflection in Week 9, he wrote,

*I don't want to write the Chinese characters because they are just hard for me. I asked Miss Fu to teach me how to write them and she showed me "zú qiú" which means "soccer". I watch her process and then I do as she did. I think the characters seem not very hard. (Martin, students' weekly reflection)*

My data suggest that sequential modelling and imitation (CS2) was beneficial to non-background learners who are learning to write Chinese characters, particularly at the beginning stage. In the focus group discussion, students fed back that this scaffolding had strengthened their impressions of how to write the Chinese characters. As mentioned earlier, Orton (2008, 2016b) emphasised writing Chinese characters as an inevitable challenge for Australian students. This challenge occurred in my study, however, sequential modelling and imitation (CS2) contributed to overcome this challenge by allowing learners to imitate and learn the writing of Chinese characters step by step.

Of note was Ken's progression in writing the Chinese characters on his storyboard. In Week 9, Ken wrote “比赛结束，我们赢了” [Then at the end of the game, we won] (see Figure 6.3).

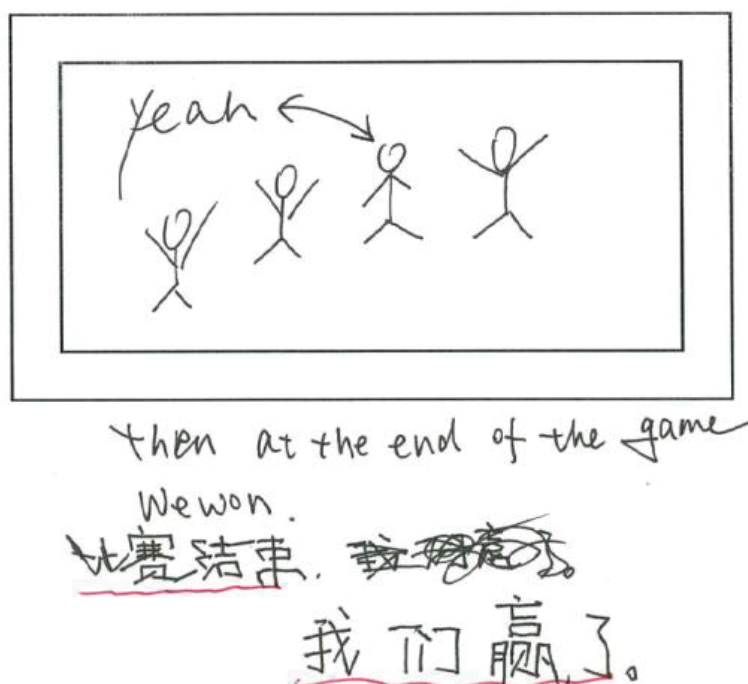


Figure 6.3. Ken's storyboard.

By Week 9, an analysis of Ken's storyboard shows his progress in writing Chinese words. Compared to the first four words, the last four words are much clearer and are much closer to the standard Chinese characters. This complex sentence has 8 characters, including “赛” and “赢” which has 14 strokes and 17 strokes respectively. Noted that he had only learnt Chinese for less than 10 hours, the characters he wrote are totally beyond my expectation, especially “赢”. The character “赢” has five parts (“亡”, “口”, “月”, “贝”, and “凡”) and Ken placed the separate parts properly after I had shown him the writing of this word.

Hertzberg (2016) argued that when teaching English as an additional language, there should be opportunities for students to first notice the target language features and then given practices to help them “recycle” the language use. Likewise, I argue that the same principle can

be applied to learning Chinese as a second language. In my study, sequential modelling and imitation (CS2) gave my students opportunities to pay attention to how Chinese characters were written. For example, when I was modelling the writing of characters for Ken, I told him to focus on the order of strokes and the organisation of different parts. These opportunities modelled their writing processes and made Chinese character writing more acceptable for the non-background learners in my study.

### **6.2.3 Distancing**

Distancing (CS4) is the fourth level of social scaffolding in Mascolo's (2005) levels of co-regulated interaction and support. When this social scaffolding was used, "expert creates cognitive demand on novice, motivating constructive action (e.g., requests for evaluation, inferences, comparisons, open-ended questions, etc.)" (Mascolo, 2005, p. 188). Unlike sequential modelling and imitation (CS2), distancing (CS4) focuses on the key point that the novice gives the answer by himself or herself, and such strategies create distance between the novice's current ability of the task and possible future understanding. Distancing (CS4) emphasises student-centred learning as teachers do not give the answers directly but give students the space to think out the answers.

#### ***6.2.3.1 Distancing (CS4) in Chinese vocabulary learning***

The ultimate objective of scaffolding is that the novice is able to complete a certain task without the assistance from an expert (Bickhard, 1992). To achieve this goal, students need to be given the opportunity to explore the knowledge by themselves. Questioning is one type of distancing (CS4) as it provides cognitive support to the novice. In the context of my research, questioning was a feasible strategy to keep students' minds and attention on the learning task and to provide them with the opportunities to use Chinese language to express themselves.

Based on my data, I observed that the effectiveness of questioning was more evident when I scaffolded students' learning of key vocabulary words in Week 7. Week 7 was dedicated

to teach the students some basic expressions of Chinese that they could use in their digital stories. To gain a basic understanding of the Chinese version of their stories, it was important for them to learn the vocabulary carefully and thoroughly. Hence, I focused on the differences and commonalities between Chinese and English in my lesson. In that week, I asked the class if they could find any differences or commonalities between Chinese and English by comparing the words and sentence structures in the vocabulary list (see Table 3.1). Two of my students, Robbin and Richard, were eager to share with the class what they had compared. Both were zealous fans of sport; they got their answers by comparing the vocabulary of sport. Robbin volunteered to answer my question and correctly pointed out that there were two different ways of saying “play” in Chinese (“dǎ 打” and “tī 踢”), depending on the body parts players use in this ball game. However, in English, there is only one verb (“play”). Richard observed that all the ball games ended with the same word (“qiú 球” [ball]) in Chinese, and these words all end with “ball” in English. By asking the students a question instead of telling them what I knew, I provided the learners with the initiative to report their knowledge. By applying distancing (CS4) in that week, students actively thought of ways to express certain words in Chinese and consciously sounded these Chinese words out.

In another instance in Week 7’s lesson, I observed that Gloria and Ella were able to tell the differences and commonalities between Chinese and English by studying the words related to the topic “family”. Gloria replied that the pronunciations of pronouns (“he”, “she” and “it”) were same in Chinese (“tā 他/她/它”), but there were three different words in English to indicate male, female and inanimate object. Ella responded that the nouns of family members in Chinese all have “*the same double sounds*”, like “bà bà 爸爸” and “mā mā 妈妈” (she meant duplicated words). In addition, Jason’s answer was related to the topic “trip” because his story was about a trip to the Blue Mountains. He found that there was a “le 了” at the end of each sentence structure, and he asked me the role of this word in these sentences. I replied that this



word showed the event had been done, just like the past tense in English. Based on my participant observation in Week 7, I observed that the use of questioning to assess their understanding about the Chinese words was essential before I could engage students to express their stories fully in Chinese. My data suggest that such use of questioning benefited students in gaining their own understanding about Chinese language.

King's (1994) argument supports my finding as she put forward that the use of thought-provoking questions such as "what are the strengths and weaknesses of ..." promote the building of qualitative knowledge structures. King (1994) further claimed that knowledge construction can be made intentional through instructional interventions. In my study, I intentionally asked the students to summarise the differences and commonalities between English and Chinese. When the students engaged in comparing and contrasting these two languages, they were actively connecting the new material (Chinese) to the existing knowledge (English) and constructing their new knowledge (Jonassen, 1995). King (1994) also pointed out that questioning, an overt constructive activity enhances learning and the learning effects are stronger when the questions are related to learner' prior knowledge. In my study, I asked the question that connected to their existing knowledge. Therefore, my use of questioning helps students' understanding of Chinese and thus, enhanced the retention of Chinese vocabulary.

The participants in my study could be regarded as bilingual learners. Being bilingual hastens the development of certain metalinguistic skills in young children (Galambos & Goldin-Meadow, 1990). Marian and Shook (2012) clarified that this skill is metalinguistic awareness, which refers to the ability to recognize language as a system that can be manipulated and explored. The metalinguistic awareness of my participants was improved as they were actively thinking about the differences and commonalities between Chinese (new knowledge) and English (existing knowledge).

My data from students' weekly reflections also suggest that when used appropriately, distancing could scaffold students' learning by allowing them to construct the knowledge in their own ways. Students themselves acknowledged that distancing helped their production of Chinese digital stories. For instance, Gloria reported that questioning helped the active construction of her knowledge about Chinese vocabulary:

*Miss Fu asked some questions to us. And I have to try my best to think out the answer.*

*I think I get a lot of ideas in this process. It is really helpful to my learning and I like this way. (Gloria, students' weekly reflection)*

Distancing (CS4) also promotes meaningful learning in my study. The discussion among the focus group proves my argument. The question was "What do you think about the experience of finding differences or commonalities between Chinese and English?"

*I think a lot in this experience. I try hard to find out the differences. And the differences between Chinese and English make me pay much attention to it. As a result, I can memorise the vocabulary better. (Robbin, focus group discussion)*

Robbin clarified that the experience of comparing two languages helped him memorise the Chinese vocabulary more effectively. The comparison attracted his attention and forced him to think about the differences between his first language and foreign language. In addition, Jason said he knew how to describe an event that had been done or finished in Chinese through this experience. This language point was acquired by him during the questioning process. It can be seen that questioning facilitated learners' memorisation of new words. King (1994) said that the memory will become stable and durable over time. However, I did not have the chance to exam the stability and durability of learners' memory after this DST project was finished.

Mascolo (2005) claimed that questioning motivates constructive action. What he said was true in my study as students actively constructed the knowledge by themselves and built their own understanding about Chinese language in class. Meanwhile, after the analysis of learners' weekly reflections and students' responses in the focus group discussion, I am able to

say this strategy improved learners' metalinguistic awareness and promoted meaningful learning as well.

### **6.2.3.2 Distancing (CS4) in pronouncing the pinyin**

Distancing (CS4) happened not only in the process of learning Chinese vocabulary; it also occurred when the students were trying to pronounce the *pinyin* of their stories. In Week 9, when the one-to-one conferences happened, Robbin came to me and asked how to pronounce “yóu xì 游戏” [game] and “zú qiú 足球” [soccer] in his story. I remembered that I had shown him the pronunciation of these two words in the former lesson (Week 8) by using sequential modelling and imitation (CS2). Instead of telling him the pronunciation directly, I asked him about the consonant and vowel in the syllable “yóu (游)”. I also asked him for the right tone in pronouncing it. After he had given his answers, I let him blend the pronunciation of the consonant and the vowel together with the tone to sound this syllable out. He did quite well in articulating this syllable. Nevertheless, the pronunciation of “xì 戏” was a difficulty for learners whose first language is English. As discussed in Chapter 5, some consonants and vowels in Chinese have a different pronunciation in English, which placed challenges in Chinese language acquisition in my study. The consonant “x” was one of them.

Robbin was confused when I asked him the consonant of the syllable “xì”. After a while, he answered with [ks] in the way “x” was pronounced in English. Then I gave him a hint that the pronunciation of “x” in Chinese was similar to [ʃ] in the word “sheep”. Finally, he recalled the articulation of “x” in Chinese and said this syllable correctly. Then I let him say “yóu” and “xì” together and told him this word means “game” in Chinese. In Robbin's situation, the pronunciation of “qiú” also marked a significant challenge, as there is no corresponding sound of the consonant “q” in English. Many students tended to pronounce this consonant like [kw] on account of the letter “q” in English. I implied Robbin that the consonant of “qiú” sounds like [tʃ] in the word “cheese”. With the hints I gave him, Robbin was able to refine and correct

his pronunciation of these two words. In this case, distancing (CS4) was most evident when I tried to assist Robbin when he was confused about the pronunciation of “yóu xì 游戏” [game] and “zú qiú 足球” [soccer]. As he had forgotten the pronunciation of consonants “x” and “q”, I had to couple distancing (CS4) with hints to assist him with the articulation of these two consonants. I also encouraged and praised him when he could speak these two words correctly. Distancing helped many students like Robbin to differentiate the phonemes and enabled them to blend these sounds together to encode *pinyin*.

My data suggest that distancing (CS4) was more appropriate after I had applied sequential modelling and imitation (CS2) in the process of pronouncing *pinyin*. This was because students already knew the articulation of some of the consonants and vowels. Further analysis of students’ weekly reflections shows that students agreed with me that this order of scaffolding was appropriate for them. For instance, Daniel said the following in his reflection:

*Miss Fu teaches me how to say the word “bàng qiú” [baseball] in my story. The way she teaches me this time is different from last time. Last time she just pronounced the pinyin and let me follow her. This time she asked me the consonant, vowel and tone of this word and let me try to say it together. At first, it is difficult. But when I practice for more times, it becomes very easy for me and I can learn more. (Daniel, students’ weekly reflection)*

Daniel’s reflection shows that he had noticed the two levels of scaffolding, sequential modelling and imitation (CS2) and distancing (CS4). He appears to suggest that he was able to learn how to encode *pinyin* by himself because my questioning technique, as a form of scaffolding, compelled him to practise blending the consonants and vowels, which was necessary for him to become more independent in his reading. Like Daniel, in the focus group discussion, Ella suggested that she could apply the same questioning technique to help herself encode *pinyin*:

*I prefer the latter one [CS4]. In the just imitation method [CS2], I can only know the pronunciation of one certain pinyin, but in the other way, I can use this way to practise other pinyin. (Ella, focus group discussion)*

Further analysis of the students' artefacts shows that students improved their pronunciation once they were able to teach themselves how to blend the consonants and vowels. For instance, Robbin's final artefact shows his progress in the pronunciation. In Week 9, "zú qiú [足球]" was pronounced by him as [zu kwju]. But in his digital story, it was self-corrected and read as "zú qiú". The oral expressions of Daniel and Ella were improved as well after comparing the audio recordings in their final digital stories and their performance in Week 9.

When I applied distancing in Week 9 with the intention to let students practice the language meaningfully, I observed that the more capable students ended up mimicking the way I encoded *pinyin* and used it as a strategy to teach themselves how to pronounce *pinyin*. In this way, my data shown in this subsection suggest that while I had intended to apply distancing, I unknowingly had modelled a strategy for my students to learn how to read *pinyin* independently.

Hertzberg (2012) argued that a skilful teacher needs to apply appropriate strategy at the right time and scaffolding should be employed following the order: from fully guided to partial guided and finally, to students' independent learning. Based on my research data, I am inclined to agree with Hertzberg that appropriate scaffolding should be enforced to help students notice the target language and continue to scaffold their learning till they are capable of independently using the target language to create a text. However, learning Chinese language skills within a short timeframe for non-background learners do not necessarily follow a linear progression suggested by Hertzberg. Whenever needed, the scaffolding process is more iterative than described by Hertzberg; whenever needed, I have to direct my participants' attention to the targeted language feature, written or oral, before they could do more with the Chinese language, as discussed in this chapter.

In summary, I argue that distancing (CS4) was effective in Chinese vocabulary learning and *pinyin* pronunciation for non-background learners when students participated in the DST to enhance their language skills. However, distancing (CS4) had no advantage in the aspect of writing characters in my research. The participants in my research were all primary school students aged 11 or 12, and they had only been learning Chinese less than 10 hours. They had limited prior experience of writing characters; thus, they did not know whether they should write the horizontal stroke first or the vertical stroke, or write from the left side or the right side. These challenges in the writing system of Chinese mentioned in Chapter 5 could not be solved by distancing (CS4) in my context. Therefore, by comparing these two strategies (CS2 and CS4), in terms of writing characters, I could only employ sequential modelling and imitation (CS2) in the context of my research while both of the strategies (CS2 and CS4) could be applied to the teaching of *pinyin* pronunciation. Hence, when applying Mascolo's (2005) scaffolding strategies, CFL teachers should be cognisant of applying which strategy to teach non-background learners how to read, speak and write in Chinese. Unlike Mascolo's general recommendation, this strategy might work only for developing certain language skills in non-background learners. In my case, it worked only for the pronunciation of *pinyin*.

#### **6.2.4 Direction**

Direction (CS5) is described as “expert provides explicit directions about how to perform or understand action or meaning” (Mascolo, 2005, p. 188). Direction (CS5) focuses more on giving the guidance directly while distancing (CS4) puts emphasis on using questions or requests to guide the novice's action. In my study, direction (CS5) was evident in *pinyin* pronunciation.

As described previously, one-to-one conferences took place in Week 9's lesson. The participant observation of that week allowed me to observe a common phenomenon in that lesson. Cognisant of the fact that distancing (CS4) worked well after sequential modelling and

imitation (CS2) in the aspect of *pinyin* pronunciation, I showed this way of practising *pinyin* to the whole class (see Figure 6.4):

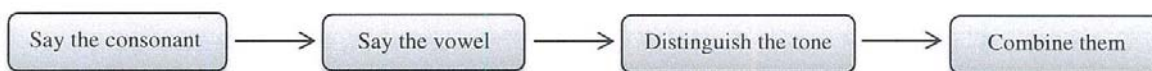


Figure 6.4. The process of practising pinyin.

I then found that more than half of the students used this way when practising the script of their stories. Although some of them did not make the correct sound (e.g., Richard could not pronounce “huá bǎn chē 滑板车” [scooter] correctly because he did not know the right way of holding the tongue when pronouncing retroflex, and he had no idea of the difference between consonants “ch” and “c”), their attempts were worthwhile. Many students were inclined to spell out the syllable; that is, say the consonants and vowels separately and then blend them together to make the correct sound, which is the same way presented in Figure 6.4. As discussed in section 6.2.3, students began to learn how to mimic my way of encoding *pinyin*. My use of distancing (CS4) became a strategy to model them how they could guide themselves in reading *pinyin* independently.

Followed by distancing (CS4), I consolidated my teaching on how to read *pinyin* by directing the students in articulating the consonant first, then the vowel and tone, and finally the whole syllable, as shown in Figure 6.4. In this way, distancing (CS4) and direction (CS5) worked alongside as a paired strategy for the students to read *pinyin*. This paired scaffolding strategy was well received by my students. An example is found in Robbin’s reflection in Week 9:

*I like the way Miss Fu teaches me how to pronounce the pinyin of my story. She just guides me to the correct sound but not tell it to me directly. Although I prefer she*

*showing the sound to me directly, I think this way is more useful. (Robbin, students' weekly reflection)*

Robbin used the word “*guide*” to describe the direction (CS5) I gave him. It could be argued that Robbin’s use of “*guide*” was synonymous with “direct”. He also pointed out that direction (CS5) was “*more useful*” to him than sequential modelling and imitation (CS2) in terms of pronouncing *pinyin*. When Robbin was first learning how to say the Chinese words in Week 8, sequential modelling and imitation (CS2) was suitable for him. Nonetheless, by Week 9, sequential modelling and imitation (CS2) itself is insufficient because he was able to pronounce most of the syllables in his story but still struggled with some demanding pinyin (such as “*xǐ huān 喜欢*” [like] and “*kāi chē 开车*” [drive]). I stepped up my scaffolding to refine and correct his articulation by giving him direction (CS5) on how to position his tongue and how to shape his mouth. Like Robbin, all my students commented that this order of stepping up my scaffolding was well received when they shared their learning experiences in their reflections and in the focus group discussion.

For Australian students, speaking Chinese language is difficult as their first language (Australian English) tends to bring negative influence on their oral expressions of Chinese (Orton, 2008, 2016b). In my study, participants’ first language affected the acquisition of the articulations of “q”, “x” and “e” in Chinese because these vowels and consonants have totally different pronunciations in English. Without appropriate directing, students will find it challenging to speak Chinese language. In my study, direction (CS5) was most evident and effective once the students had gained basic understanding of the *pinyin* pronunciation. In order to perfect the pronunciation of harder phonemes like “x” and “q”, students needed my guidance to know how to produce these sounds by holding their tongues in the right position and shaping their mouths correctly.



### 6.2.5 Concurrent modelling and imitation

When concurrent modelling and imitation (CS6) takes place, “novice imitates modelled action *while* expert provides modelling and direction” (Mascolo, 2005, p. 188). It differs from sequential modelling and imitation (CS2) in the time the action of the novice happens. In sequential modelling and imitation (CS2), the action of the novice happens *after* the modelling has been completed, while in concurrent modelling and imitation (CS6), the action happens *during* the modelling. In my study, I also applied this kind of strategy to help students overcome the difficulty of writing Chinese characters.

In Week 9, when I was having one-to-one conferences with students, some students mentioned the difficulty of *pinyin* pronunciation while other students referred to their unwillingness to write Chinese characters. Richard was one of the participants reluctant to write characters. According to my participant observation of Week 9, Richard expressed his idea that he did not want to write some difficult characters in his story: “*I can try the easy one but I really don’t want to copy the hard one*”. At that time, I knew the student needed more than encouragement and praise (CS1). Therefore, I decided to show him the order of strokes of some characters in his story to make him believe that the characters were not so difficult for him to write. I taught him the characters of “船 *chuán*” [boat] and “交通 *jiāo tōng*” [transportation] and let him follow my writing steps stroke by stroke.

In this situation, Richard wrote the character *during* my modelling, which was in consistency with the definition of concurrent modelling and imitation (CS6). When he was following my steps of writing “船 *chuán*” [boat], I told him that he could divide this complex character into three different parts (“舟”, “几”, and “口”). I coupled direction (CS5) with concurrent modelling and imitation (CS6) to assist his character writing to achieve the maximum outcome of scaffolding. When he finally finished writing these three characters, I observed that he was satisfactory. He said that perhaps he could regard the writing of those

hard characters as a “mission”. The outcome of the combination of strategies could be assessed by his response in the focus group discussion. His original words were:

*You showed me the order of stroke of the character “船 chuán” [boat] and told me this character can be divided into three parts. It makes this character much easier. I’m not afraid of writing characters now. (Richard, focus group discussion)*

Many students’ reactions towards my use of concurrent modelling and imitation (CS6) were similar to Richard’s. They were able to overcome the difficulty of writing Chinese characters by following my modelling step by step.

When the learners have insufficient prior knowledge of the writing system of Chinese, concurrent modelling and imitation (CS6) was needed in teaching non-background learners how to write characters. In my study, the hardness of writing characters, a common learning difficulty repeated in literature, could be addressed by allowing learners to follow my steps of writing a character. In addition, their digital stories demanded them to write at least 40 characters per story (an average after looking through students’ storyboards), a task that could only be addressed with my concurrent modelling and imitation (CS6).

Mascolo (2005) advocated concurrent modelling and imitation (CS6) for the novice to complete a task together with the modelling from the expert. In his research, he showed an example of a child imitating an adult who models how to cross laces or put one lace under another. Similar to his study, this strategy was also particularly useful when non-background learners began to learn the writing of Chinese characters. When applied appropriately, this strategy built learners’ confidence in writing characters and led to their active participation in writing Chinese characters.

### **6.2.6 The absence of asymmetrical assistance (CS3) and guided modelling and imitation**

### (CS7)

As the above five levels of social scaffolding were presented and analysed, it was clear that two levels of support were not observed in my study. Asymmetrical assistance (CS3) is defined as “expert breaks down task, performs part of task without distancing or direction” (Mascolo, 2005, p. 188), and guided modelling and imitation (CS7) means “expert models task while *physically* directing child’s actions” (Mascolo, 2005, p. 188).

Asymmetrical assistance (CS3) lays emphasis on the expert performing part of a task for the novice. However, in my study, I wanted the participants to learn by doing. This was the process whereby they attempted to experiment with the technical affordances of using PPT to express themselves. In Tan and Guo’s (2014) study, they argued that such experimentation is necessary for developing meaning making using a range of semiotic modes beyond the written language. Additionally, peer support as discussed in Chapter 4 (see section 4.3.2) enabled the students to rely less on me, their teacher, and learnt the language with their peers. My data, as presented in Chapter 4, show that my students were capable of seeking help from their classmates, and there was no need to “bail them out” by doing something that they could do by themselves with appropriate scaffolding.

Guided modelling and imitation (CS7) highlights the physical help from the expert. In my study, I had already applied concurrent modelling and imitation (CS6) to the writing of characters. Therefore, I did not think the physical assistance was necessary, as CS6 was enough for them to learn how to write Chinese characters following the sequence of strokes.

### **6.3 Ecological Scaffolding**

Ecological scaffolding refers to “the ways in which one’s relation to or position within the broader physical and social ecology moves action toward novel forms” (Mascolo, 2005, p. 190). This kind of scaffolding focuses on the support provided by the environment, while social scaffolding focuses on the interaction between expert and novice. There are three types of

ecological scaffolding as identified by Mascolo (2005): (1) naturalistic scaffolding, (2) positional scaffolding, and (3) task/object scaffolding. In my research, I was able to observe one type of ecological scaffolding: task scaffolding.

Task scaffolding refers to “the ways in which the task itself or the objects of action structure the construction of novel ways of acting and thinking” (Mascolo, 2005, p. 192). Mascolo further mentioned that actions are operated upon a certain task, and the task itself acts as an organiser in the performance of actions. In this way, action and task promote each other to a higher level. In the context of my research, the entire process of producing Chinese digital stories guided students’ actions and led them to the successful performance of their stories.

In my study, based on the teaching and learning sequences presented in Chapter 3, before the students were able to tell their stories fully in Chinese, they had to decide the themes of their stories so that the stories were authentic to them. After a theme was identified, each student was asked to write an initial script and complete the planning sheet (refer to Appendix 1) that consisted of the theme, the reason for choosing this theme, and the first draft of their story. They had to organise their stories in logical structure with clear introduction, body, and ending. When required, they had to revise the planning sheets to make their stories complete and logical. Thereafter, the students were asked to present their stories in the form of storyboards (refer to Appendix 2). They had to choose the sentences that conveyed the main idea of their stories from the planning sheets and draw the images they wanted to present in the final digital stories. The sentences had to be grammatically correct and support the choice of image; both words and images must cohere with the theme they selected. After the completion of the storyboards, they learnt the basic Chinese vocabulary to gain a better understanding of their Chinese version stories. I provided stripes (with *pinyin*, characters, and English translation) for the participants to help them express their stories fully in Chinese. Then the

participants began to make the PPTs, adding the images and recording their own voices in the slides. The last step of the DST project was presentation.

Hertzberg's (2016) modified teaching and learning cycle includes four actions in teaching and learning sequences: noticing, recycling, recasting, and consolidating. Following Hertzberg's argument that developing students' oracy first before teaching them writing skills is crucial for learning English as an additional language, I am inclined to think that Hertzberg's argument is valid for learning Chinese by non-background learners. Hence, I adopted these four phases to guide my students in developing digital stories using Chinese vocabulary. Noticing referred to the process whereby the participants were intentionally exposed to the key Chinese vocabulary (refer to Table 3.1). Then, the stripes (include *pinyin*, characters, and English translation) were made to enable students to "recycle" the targeted language as they were required to write the *pinyin* and characters from the stripes to their storyboards. Once the students were familiar with both the context of this project and the language, they were ready to apply the vocabulary they had learnt to their digital stories (recast). They further consolidated their understandings as they participated in the production of digital stories with their classmates and wrote their weekly reflection to reflect their learning. In sum, under the context of my research, from the analysis of different types of data, it can be concluded that task scaffolding is needed to guide students to the completion of their Chinese digital stories. Below is Jason's storyboard. He completed this creative storyboard under the task scaffolding in my study as well as his desire to tell his own story in Chinese.

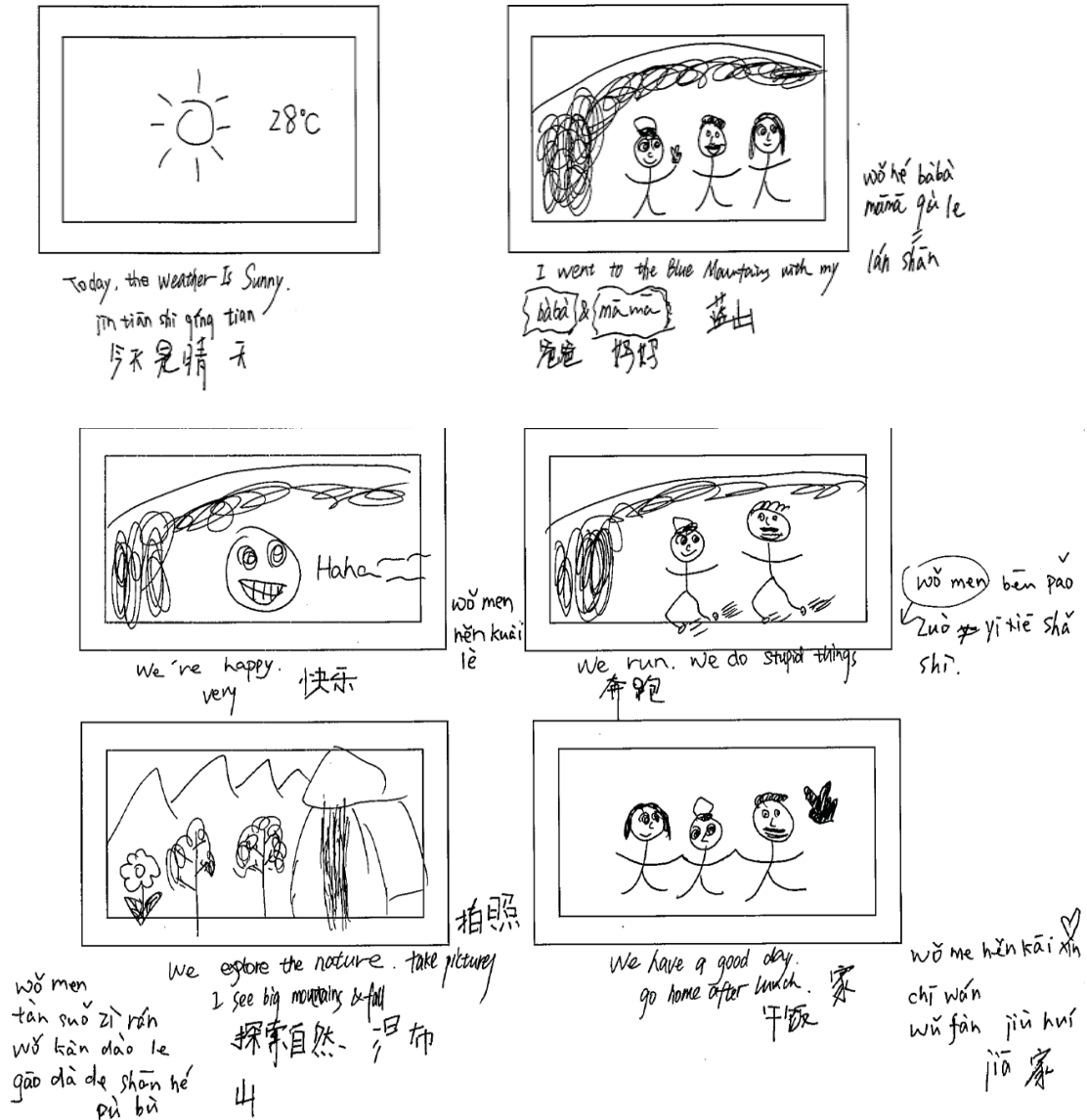


Figure 6.5. Jason's complete storyboard

## 6.4 Summary of the Chapter

When analysing my own scaffoldings in my teaching, I found Mascolo's (2005) framework of three types of coactive scaffolding and seven levels of social scaffolding useful. As illustrated in my findings, both social scaffolding and ecological scaffolding were necessary for the affordances I highlighted in Chapter 4 to occur. Without them, I was not able to help my students overcome the two primary challenges they faced in learning Chinese using DST (refer to Chapter 5).

In this chapter, I pointed out the suitability of each level of social scaffolding in my context. In my teaching, I had to provide a higher degree of support in students' unsubstantial point. For instance, distancing (CS4) and direction (CS5) suited only in the aspect of *pinyin* pronunciation, while concurrent modelling and imitation (CS6) could only play an essential role in the learning of Chinese writing system. This discrepancy resulted from students' greater proficiency in *pinyin* pronunciation compared to character writing. Nonetheless, in my study, encouragement and praise (CS1) and sequential modelling and imitation (CS2) were applicable in both oral expression and Chinese writing system. Although I have presented the scaffolding strategies in order of Mascolo's levels of co-regulated interaction and support, in practice, these were applied following Hertzberg's (2012) principle of scaffolding, i.e. from fully scaffolding to partial scaffolding and finally to independent learning. As for independent learning, in my study, students were only able to sound the *pinyin* out by themselves because their insufficient prior knowledge of Chinese writing system prevented them from writing characters without my assistance.

Based on my analysis, the various scaffolds I put in place worked together effectively. Although Mascolo's (2005) framework appears to be hierarchical, my data suggest that two different levels could be implemented together when the situation called for it. For instance, my data show that encouragement and praise (CS1) could be adopted all the time. Similarly, my intended use of distancing (CS4) unintentionally served as a model to teach students what questions they should be asking themselves whenever they had to read *pinyin*. My study also indicates that not all levels of scaffolding were necessary. In my data, asymmetrical assistance (CS3) and guided modelling and imitation (CS7) were not needed. Finally, the methods of data collection might have limited my access to the evidence of possible self-scaffolding at home that were not captured in my data. In Chapter 7, I discuss future directions for the implementation of DST in a CFL context in light of the limitations of my study.

## CHAPTER 7:

### Conclusion

#### 7.1 Introduction

In Chapter 1, I raised the concern that Chinese education for non-background learners remains teacher-centred. Such an approach may be useful for providing a standard curriculum for learners (Pischetola, 2014), but it leads to issues such as a decrease in students' interests in learning and fails to retain strong enrolment in learning the language (Moloney & Xu, 2015). Past research on teaching Chinese to non-background learners in Australia has highlighted that amongst many challenges, one relates to the dominant teacher-centred approach of teaching Chinese. I started my study with the argument that in studies related to CFL education, particularly in Australia, technology has not been pervasively explored, while studies in educational research has pointed out that technology has the potential to promote student-centred learning that is meaningful to learners.

In light of these issues related to teaching Chinese to non-background learners, my study aimed to investigate the potential of using technology, specifically through the use of digital storytelling, as a student-centred approach to teach non-background learners and engage them in learning Chinese meaningfully. Towards that aim, I asked,

1. How does digital storytelling afford non-background learners' Chinese language learning?
2. What are the challenges of using digital storytelling to teach non-background learners of Chinese?
3. What scaffolding strategies make Chinese learnable when non-background learners create digital stories to develop their language skills?

Based on the case study methodology, I adopted multiple data collection methods, namely, participant observation, focus group discussion, and students' artefacts (including



students' weekly reflections) to pursue my research questions. There has been extensive research on DST, especially in English language learning. Research studies have singly pointed to the diverse benefits of DST regarding enhancing students' academic achievement, skill development and learning motivation (Miller & Kim, 2015). However, less is known about its potential benefits in Chinese language learning, particularly in the context of teaching non-background learners. In my study, I drew on the concept of affordances to examine the potential of DST and critically studied the challenges of using it to teach non-background learners. As a teacher-researcher, I also sought to understand what scaffolding strategies were necessary to make Chinese learnable and meaningful to my participants in the Australian context.

By the end of my research, the learning outcomes were met as the participants were able to understand the key vocabulary they had to learn in the term when the research was conducted. They were also able to pronounce most of the *pinyin* in their own stories correctly and write the Chinese characters needed for their digital stories. The students were able to express themselves through the use of DST in Chinese, albeit in some cases code-mixing was evident in their digital stories. Since this thesis is not in a multimedia format, I am not able to present the multimedia version of the participants' digital stories as artefacts when discussing my findings in the thesis.

In this last chapter of my thesis, I first present a summary of the key findings of my research, followed by the contributions of my study to the field of teaching Chinese as a foreign language. I then conclude with the limitations of the study and make recommendations for future research

## **7.2 Key Findings of the Study**

Based on Kirschner et al.'s (2004) definition of affordances, I sought to examine the affordances of DST for non-background learners to learn the Chinese language in the Australian context. In Chapter 4, I argued that DST in Chinese language lessons proved to

assist my participants' language learning in two primary aspects: (1) it enhanced the retention of Chinese vocabulary through two means; that is, allowing students to draw on their prior knowledge and making the mastery of newly-learned vocabulary easier and more meaningfully, and (2) it promoted engagement in the learning process. My study shows that the non-background learners exhibited the following types of engagement in the DST process, namely: (1) they were cognitively engaged when they had to express themselves grammatically in Chinese, both in written and oral expressions; (2) they were actively participating in the process of creating digital stories by offering peer assistance in language expressions and technical productions; and (3) they were emotionally engaged to complete their digital stories even when challenges were encountered during the digital media productions.

Challenges during the DST process were expected as it was the first time the participants engaged in DST. In Chapter 5, I highlighted two key challenges, namely, (1) students' overemphasis on technical aspects and (2) the linguistic characteristics of Chinese. Students' overemphasis on technical aspects were expected when their ICT skills in using PPT were limited. Nevertheless, there were instances where four students were caught up with the technical operations because they were experimenting with sounds for their digital stories and engaged in off-task playful talk and behaviour. These findings were also reported in other studies, especially when participants were new to the technology and limited time was given to them for experimenting with the technical affordances of the technology used. The linguistic characteristics of Chinese remain a challenge to non-background learners, particularly in two aspects: the oral expression of Chinese and Chinese writing system. This challenge has been consistently reported in studies on non-background learners learning Chinese (Hao, 2012; Odinye, 2012); Orton, 2008, 2010; Tsukada, Xu and Rattanasone, 2015). My research coheres with the key findings of these studies that show similar challenges encountered by my participants, namely: (1) distinguishing and pronouncing different tones in Chinese; (2)

articulating the consonants and vowels that have different pronunciations in English (such as “q”, “x”, and “e”); and (3) the ideographic nature of Chinese language that does not reflect any connection between a character and its *pinyin*. In terms of character writing, the logographic writing system of Chinese remains the primary obstacle to non-background learners who are not familiar with the alphabetic writing system.

In order to ensure the educational aspects of DST were attained, I had successfully applied a range of scaffolding strategies that were conducive for making Chinese learnable to my research participants. Retrospectively, I found Mascolo’s (2005) scaffolding framework useful in making explicit my own scaffolding strategies as a teacher–researcher.

In terms of social scaffolding, providing encouragement and praise (CS1) was always necessary throughout the DST project with my research participants. In Chapter 6, I argued that this type of scaffolding might be the lowest level, but it could be used together with other scaffolds such as distancing (CS4). Sequential modelling and imitation (CS2), as the second-lowest level of social scaffolding, was useful in teaching my participants *pinyin* pronunciation and character writing. When the participants had sufficient prior knowledge and practice of *pinyin* learning, distancing (CS4) was useful in involving the participants to make the right sound of each syllable when pronouncing the *pinyin* of their stories. However, this level of scaffold was not enough for teaching them how to write a character due to their insufficient prior knowledge of Chinese writing system.

In Chapter 6, I raised an interesting finding that while I intended to use questioning as a form of distancing (CS4), there was evidence that the better-abled students mimicked my questioning technique and used it whenever they encountered new *pinyin* in their reading. A comparison between sequential modelling and imitation (CS2) and distancing (CS4) shows distancing (CS4) was more appropriate after I had applied sequential modelling and imitation (CS2) in the process of pronouncing *pinyin*. Giving direction (CS5) proved to be a useful

scaffold for developing oral expression only when the students gained the ability to learn the *pinyin* pronunciation independently. Nonetheless, concurrent modelling and imitation (CS6), instead of guided modelling and imitation (CS7), was needed for students who struggled with writing Chinese characters.

Other than the scaffolds I provided during my teaching, my study shows that task scaffolding was essential to reap benefits of using DST for teaching the non-background learners. In Chapter 6, I explained how task scaffolding had helped my students to notice (learn the key Chinese vocabulary), recycle (write the *pinyin* and characters from the stripes to their storyboards), recast (apply the vocabulary they learnt to their digital stories), and reflect upon their language choices.

### **7.3 Significant Contributions**

As previously elaborated, the DST project implemented in my research has integrated different skills, including language skills. It has combined presentation skills with traditional learning activities such as writing and oral expressions. By the end of my research, I have broadened the participants' Chinese vocabulary and language skills and additionally, developed their ICT competences, specifically in using PPT to express themselves in a multimedia and multimodal manner.

My study has contributed to the teaching and learning of CFL by introducing more student-centred approaches into the Chinese language learning classroom. It has broadened the repertoire of CFL pedagogies by introducing DST which tends to be used in EFL contexts. My study is one of the pioneering studies in using DST to teach Chinese to non-background learners in Australia. It has shown that DST can be a useful teaching strategy, particularly in making Chinese learnable to non-background learners if appropriate scaffolding is provided.

It has also supported Australia's policy of Asian languages and aimed to achieve the goal of the ROSETE program, which is to make Chinese learnable. Specifically, my research

participants are using the Chinese language for more authentic purpose to make a stronger connection with the texts they create and their personal experiences. Through the use of my scaffolding strategies, I have also created a conducive environment to help them accomplish the learning outcomes in an encouraging way.

#### **7.4 Limitations of the Study**

The study was a small-scale study involving only one class of Year 6 students (aged 11 to 12). Because of the short timeframe of conducting the research in the ROSETE program I was enrolled into, my study took place over a span of ten weeks. Within the short period, I could only dedicate eight lessons to prepare the students to create their Chinese digital stories. This limited period led some students to complete their digital stories at home, which meant that participant observations were not always possible.

I could have saved the digital drafts of my students' digital stories every week. Although I had taken note of notable learning points and challenges faced by some specific students, access to the various versions of their digital stories would have given me greater insights to their progression in their language skills.

Finally, a lack of resources in my study led me to design my study without involving the use of video recordings. The use of video recordings would have incurred a financial cost that was not viable for me. As a result, I was unable to conduct moment-by-moment interactions, which could have enriched my data analysis on social scaffolding.

#### **7.5 Future Directions**

Given the challenges in learning Chinese as non-background learners, I would recommend longer timeframe for such a study. Teachers who are keen to explore how DST can enhance Chinese language learning should spend more time in one-to-one conferences so that students can receive timely feedback and correction on their language skills. With a longer timeframe, students will have more time to learn *pinyin* and writing, which are necessary to

create rich digital stories. With a longer timeframe, more technical training could be incorporated so that the final stories are more interactive and multimodal with an interplay of words, images, and music.

Multimodal analysis of students' digital stories is a possible future direction for those who are keen to analyse how students use the written language alongside other communication modes to represent their understandings and thoughts of a topic. The interactions of meaning-making choices can lead to studies of students' motivations and agency in their textual practices. This means that screen casting or desktop recording software such as Camtasia is essential for data collection. Such approaches to language studies provide rich data collection methods, which may lead to deep insights to the relationships between digital media, literacy, and learning in the context of Chinese language education.

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## Appendices

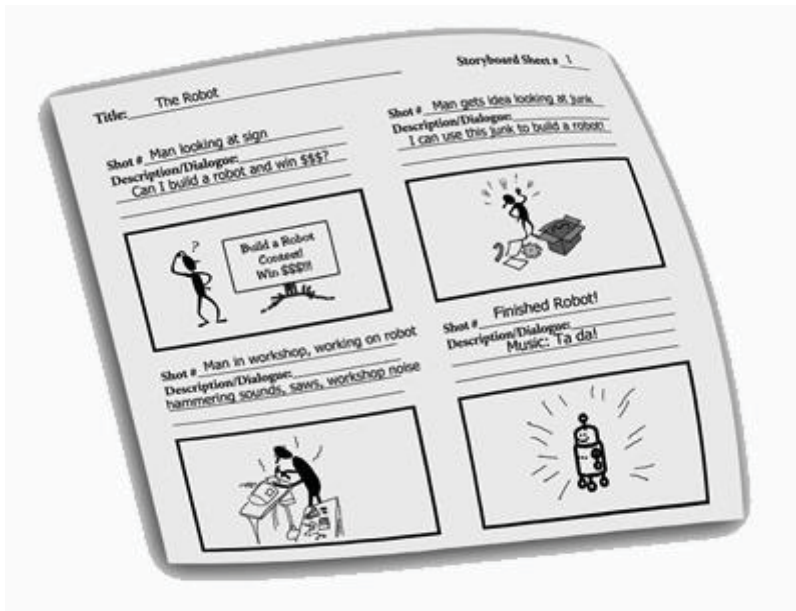
### Appendix 1: The Planning Sheet

The Planning Sheet
Name:
Themes to choose from:
Why I choose this theme:
Initial script of my story:



## Appendix 2: Storyboard

Below shows an example of the storyboard from which you can learn and you should follow the instructions to finish your own storyboard.



(Image from: <http://digitalstorytelling.coe.uh.edu/index.cfm>)

### Instructions:

1. Write the Chinese translation of one sentence from your initial script on the lines below each box (you can write in English if you do not know the corresponding Chinese translation);
2. Add images in the box that relate to the sentence you wrote previously.

## Storyboard


### Appendix 3: New vocabulary list

vocabulary list

General structure (new)	English	Pinyin	Characters
Sport (learned in term 1)	I like.....because.....	wǒ xǐ huān..... yīn wéi.....	我喜欢.....因为.....
	Two ways of "play"	dǎ / tī	打 / 踢
Trip (learned in term 2)	I play xx with xxx	wǒ hé xxx yì qǐ wán xx	我和 xxx 一起玩 xx
	Soccer/rugby/ basketball/tennis	zú qiú / gǎn lǎn qiú / lán qiú / wǎng qiú	足球 / 橄榄球 / 篮球 / 网球
	I went to.....	wǒ qù le .....	我去了.....
	The weather there is .....	nà lǐ tiān qì.....	那里天气.....
Family (new)	I brought.....	wǒ dài le .....	我带了.....
	I visited.....	wǒ cān guān le .....	我参观了.....
	There are xx people in my family	wǒ jiā yǒu xx kǒu rén 。	我家有 xx 口人。
	Father/ mother/ sister/ brother	bà bà / mā mā / jiě jiě / mèi mèi / gē gē / dì dì	爸爸 / 妈妈 / 姐姐 / 妹妹 / 哥哥 / 弟弟
	His/her name is .....	tā / tā jiào .....	他 / 她叫.....
	pet	chǒng wù	宠物

after looking at their  
reflection form & the  
questions they've asked

Scooter	huá bǎn chē	滑板车
swim	yóu yǒng	游泳
grandfather	zǔ fù	祖父
grand mother	zǔ mǔ	祖母
cheerleading	tā lǎ duì	啦啦队
play guns	dǎ yóu xì	打游戏
uniform	duì fú	队服
educational	yǒu jiào yù yì yì de	有教育意义的
friend	péng yǒu	朋友

## Appendix 4: Assessment Sheet

### Digital Storytelling Assessment Sheet

(Adapted from <https://indianajen.com/tag/digital-storytelling/> )

Students' Names: \_\_\_\_\_

Theme of the story: \_\_\_\_\_

Points	Excellent	Good	Needs improvement	Unsatisfactory
Theme	The theme is meaningful and maintains a clear focus throughout	The theme is meaningful and maintains the focus for most time of the presentation	There are a few lapses in focus and the theme is quite meaningful	The theme is meaningless and has no focus
Voice pace	The pace (rhythm and voice punctuation) fits the story line and helps the audience really "get into" the story	Occasionally speaks too fast or too slow for the story line. The pace (rhythm and voice punctuation) can still engage the audience	Tries to use pacing (rhythm and voice punctuation), but it is often noticeable that it does not fit the story line. Audience is not consistently engaged	No attempt to use the pacing (rhythm and voice punctuation).
Images	Images create a distinct atmosphere that matches different part of the story	Images create a distinct atmosphere that matches some parts of the story	An attempt was made to use images to create an atmosphere but it needed more work	No attempt to use images to create an atmosphere for the story
Duration of Presentation	Length of presentation was 4 minutes	Length of presentation was 3 minutes	Length of presentation was 2 minutes	Length of presentation was less than 2 minutes
Detail	The story is told with exactly the right amount of detail	The story seems to need a few more details	The story seems to need more details	There are no details at all.

Total points: \_\_\_\_\_

## Appendix 5: Planned Questions for Focus Group Discussion

### Planned Questions for Focus Group Discussion

1. Tell me your experience in creating digital stories to learn Chinese. Did you get any help from other people during the process of creating digital stories? What is the biggest challenge you've met during this story-making process?
2. Do you think you have learnt anything from creating the digital story? Tell me what you have learnt. Do you think digital storytelling is an effective method of learning Chinese? Tell me more.
3. Do you think learning Chinese through digital storytelling is an interesting way? Why or why not?
4. Do you become more eager to learn Chinese through this digital storytelling project? Why?
5. In your opinion, which part of this digital storytelling project needs improvement? Can you list out some advantages or disadvantages of the digital storytelling?
6. Why do you think writing characters is difficult? Do you like me showing the order of strokes of each character in class? Did you find out the connection between pinyin and characters when you wrote down the script on storyboard?
7. What do you think about the experience of finding differences or commonalities between English and Chinese?
8. Which method of teaching pinyin do you like more? Tell you the pinyin directly or ask you the consonant, vowel and tone of it?

To certain students:

To Alice: Did you become more confident about saying pinyin after my encouragement?

To Robbin: Are you still reluctant to write the Chinese characters?

To Jason: How do you feel about the experience of imitating the sound from the teacher?

## Appendix 6: Participant Information Sheet

WESTERN SYDNEY  
UNIVERSITY



### Participant Information Sheet – Parent/Carer (Specific)

**Project Title:** Digital storytelling for non-background learners of Chinese: A case study of a primary school in Australia

#### Project Summary:

Your child is invited to participate in a research study being conducted by Ningning FU, a Master of Philosophy student of Western Sydney University under the Supervision of Dr Lynde Tan and Dr Jinghe Han of Western Sydney University. The research is about using digital storytelling to help students in the process of learning Chinese in a primary school classroom. Digital storytelling is a language teaching method that involves traditional storytelling but with the use of technology, such as PowerPoint. Using this method, language learners can represent their knowledge and express themselves using words, sounds and images. This study aims to draw on students' prior knowledge and cultural resources to enhance their learning of the Chinese language. It seeks to explore how to use technology in the context of implementing digital storytelling to teach Chinese to the non-background learners in the Australian context to achieve the student-centred approaches.

#### How is the study being paid for?

This study is being sponsored by the Ningbo Municipal Education Bureau, the NSW Department of Education and the School of Education at the Western Sydney University.

#### What will my child be asked to do?

With your consent, your child will be asked to participate in the following activities:

1. The student participants will be invited to have one focus group discussion (see Appendix 1 of the Planned Questions for Focus Group Discussion) after the final presentation of digital storytelling (at the end of October). Each focus group will include 3 to 4 children facilitated by the researcher. The discussion will last from 20 minutes to 30 minutes and will be conducted out of the regular class time.
2. The student participants will be observed once a week in the Chinese language class and the focus of the observation will be on their behaviours and discussions in the process of producing the digital stories.
3. The student participants will be invited to submit their artefacts and weekly reflections in the process of making digital stories. This students' work will be collected by the researcher.

#### How much of my child's time will he/she need to give?

The focus group discussion will take up to 20-30 minutes. Other research activities will be part of the regular teaching at school, and will not take up additional time.

**What benefits will my child, and/or the broader community, receive for participating?**

Your child will have the opportunity to learn mandarin through the use of digital storytelling in their Chinese learning process. The outcomes of this research are expected to help the Chinese language teachers in the Australian context to achieve a more effective method of teaching Chinese to non-background learners through identifying the affordances of digital storytelling.

**Will the study involve any risk or discomfort for my child? If so, what will be done to rectify it?**

No, the study will not involve any risk or discomfort for your child.

**How do you intend to publish or disseminate the results?**

It is anticipated that the results of this research project will be published in a research thesis, and presented in conferences. Pseudonyms will be given to the participants such as Student 1, Student 2, Student 3. No identifiers will be disclosed and used in the researcher's thesis, conference presentations and other forms of disseminating the researcher's findings.

**Will the data and information that my child provides be disposed of?**

Yes. The data will be disposed after five years from the submission day of the researcher's thesis. The data and information will be disposed of in confidential recycle bins. All computer files will be deleted permanently.

**Can I withdraw my child from the study? Can my child withdraw from the study?**

Yes, you can withdraw your child from the study without giving any reason, at which point all written and audio records of your child's participation will be destroyed, except data which has already been collected through focus groups. The participation is voluntary. When the research activity (i.e. planning and creating digital stories) is taking place, if the child experiences discomfort, the mentor teacher who is supervising the researcher's teaching is present to counsel the child. Any child is allowed to withdraw from the research participation without giving any reason.

**What if I require further information?**

Please contact Ningning FU in the first instance, should you wish to discuss the research further.

[Ningning FU, Master of Philosophy in Western Sydney University,  
18790346@student.westernsydney.edu.au]

You can also contact my research supervisors:

University of Western Sydney  
ABN 53 014 069 881 CRICOS Provider No: 00917K  
Locked Bag 1797 Penrith NSW 2751 Australia  
[westernsydney.edu.au](http://westernsydney.edu.au)

Supervisor name 1: Lynde Tan

Office: +61 2 9772 6277

Supervisor 2: Jinghe Han

Office: +61 2 4736 0216

**What if I have a complaint?**

If you have any complaints or reservations about the ethical conduct of this research, you may contact the Ethics Committee through Research Engagement, Development and Innovation (REDI) on Tel +61 2 4736 0229 or email [humanethics@westernsydney.edu.au](mailto:humanethics@westernsydney.edu.au).

Any issues you raise will be treated in confidence and investigated fully, and you will be informed of the outcome.

If you agree for your child to participate in this study, you may be asked to sign the Consent Form. The information sheet is for you to keep and the consent form is retained by the researcher.

This study has been approved by the Western Sydney University Human Research Ethics Committee. The Approval number is H12111.

If you agree for  
your child to  
participate in  
this study, you  
may be asked to  
sign the Consent  
Form. The  
information sheet  
is for you to  
keep and the  
consent form is  
retained by the  
researcher.

University of Western Sydney  
ABN 53 014 069 881 CRICOS Provider No: 00917K  
Locked Bag 1797 Penrith NSW 2751 Australia  
[westernsydney.edu.au](http://westernsydney.edu.au)

## Appendix 7: Consent Form

**WESTERN SYDNEY**  
UNIVERSITY



### Consent Form – Parent/Carer

Project Title: *Digital storytelling for non-background learners of Chinese: A case study of a primary school in Australia*

I, \_\_\_\_\_, hereby consent for my child \_\_\_\_\_, to participate in the above-named research project.

I have discussed participation in the project with my child and my child agrees to their participation in the project.

I acknowledge that:

- I have read the participant information sheet (or where appropriate, have had it read to me) and have been given the opportunity to discuss the information and my child's involvement in the project with the researcher/s
- The procedures required for the project and the time involved have been explained to me, and any questions I have about the project have been answered to my satisfaction.

I consent for my child to:

- Participate in a focus group interview, which will be audio-recorded
- Participate in weekly learning of Chinese, which will be observed by the researcher.
- Submit artefacts and weekly reflections, which will be collected by the researcher.

I consent for my child's data and information provided to be used for this project.

I understand that my child's involvement is confidential and that the information gained during the study may be published but no information about them will be used in any way that reveals their identity.

I understand that I can withdraw my child, or my child can withdraw, from the study at any time without affecting their relationship with the researcher/s, and any organisations involved, now or in the future.

Signed:

Name:

Date:

This study has been approved by the Human Research Ethics Committee at Western Sydney University. The ethics reference number is: H12111.

What if I have a complaint?

If you have any complaints or reservations about the ethical conduct of this research, you may contact the Ethics Committee through Research Engagement, Development and Innovation (REDI) on Tel +61 2 4736 0229 or email [humanethics@westernsydney.edu.au](mailto:humanethics@westernsydney.edu.au).

Any issues you raise will be treated in confidence and investigated fully, and you will be informed of the outcome.



## Appendix 8: Western Sydney University Human Ethics Approval

Locked Bag 1797  
Penrith NSW 2751 Australia  
Research Engagement, Development and Innovation (REDI)



REDI Reference: H12111  
Risk Rating: Low 2 - HREC

### HUMAN RESEARCH ETHICS COMMITTEE

10 May 2017

Doctor Lynde Tan  
School of Education

Dear Lynde,

I wish to formally advise you that the Human Research Ethics Committee has approved your research proposal H12111 "Digital storytelling for non-background learners of Chinese: A case study of a primary school in Australia", until 31 March 2018 with the provision of a progress report annually if over 12 months and a final report on completion.

In providing this approval the HREC determined that the proposal meets the requirements of the National Statement on Ethical Conduct in Human Research.

This protocol covers the following researchers:

**Lynde Tan, Jinghe Han, Ningning Fu**

#### Conditions of Approval

1. A progress report will be due annually on the anniversary of the approval date.
2. A final report will be due at the expiration of the approval period.
3. Any amendments to the project must be approved by the Human Research Ethics Committee prior to being implemented. Amendments must be requested using the HREC Amendment Request Form: [https://www.westernsydney.edu.au/\\_data/assets/word\\_doc/0012/1098995/FORM\\_Amendment\\_Request.docx](https://www.westernsydney.edu.au/_data/assets/word_doc/0012/1098995/FORM_Amendment_Request.docx)
4. Any serious or unexpected adverse events on participants must be reported to the Human Research Ethics Committee via the Human Ethics Officer as a matter of priority.
5. Any unforeseen events that might affect continued ethical acceptability of the project should also be reported to the Committee as a matter of priority
6. Consent forms are to be retained within the archives of the School or Research Institute and made available to the Committee upon request.
7. Project specific conditions:  
There are no specific conditions applicable.

Please quote the registration number and title as indicated above in the subject line on all future correspondence related to this project. All correspondence should be sent to the e-mail address [humanethics@westernsydney.edu.au](mailto:humanethics@westernsydney.edu.au) as this e-mail address is closely monitored.

Yours sincerely

A handwritten signature in black ink, appearing to read 'Elizabeth Deane'.

Professor Elizabeth Deane  
Presiding Member,  
Western Sydney University Human Research Ethics Committee