Kaycheng Soh *Editor*

Teaching Chinese Language in Singapore

Retrospect and Challenges

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Prologue

If you talk to a man in a language he understands, that goes to his head. If you talk to him in his own language, that goes to his heart.

(Nelson Mandela)

Language is the greatest human invention. It enables ideas to transcend time and space and thereby makes many other inventions possible. Language is learned with varied motives: instrumental motive for purposes extrinsic to the language, integrative motive for engaging with valued people and cultures, and identity motive for assuring self-identification. These motives for language learning are relevant to Singaporean students to varying degrees.

Singapore is a multicultural society comprising four main ethnic groups, Chinese, Malay, Tamil, and Others. For social cohesiveness, there is a need for a language for intergroup communication and administrative convenience, and there is a need for a language for keeping up with the world development, especially in science and technology. The natural choice, for historical and other relevant reasons, is English. This changes the characteristics of Singapore's education systems, especially its curriculum.

Thus, the New Education System was introduced in the late 1970s (Yip and Sim 1990). In this system, all Singaporean students in primary and secondary schools learn English, which is also the medium of instruction for all other subjects (occasionally, except Moral Education), and a Mother Tongue (then referred to as a Second Language). This being the case, Chinese became a stand-alone subject comparable to other subjects such as History, Geography, etc. The most visible change is that the learning of Chinese does not get reinforced in the other parts of the curriculum.

Although instructional time is always seen as a key factor of effective learning, it may not be so (Soh n.d.). On the other hand, pedagogy is another candidate for explaining effectiveness in learning or the lack of it, and the teaching of Chinese has often been criticised for its approach which renders the students passive and the language uninteresting. With these two conditions coming together, challenges to curriculum developers and forefront teachers arise.

The challenges come in the form of curriculum, instruction, home support, and, above all, teachers' capabilities in terms of teaching strategies, assessment skills,

and the use of information technology. These are believed to be the main contributors to effective teaching and learning of Chinese and are covered in the articles collected in this volume and abstracted below.

The Past: A Review of the Five Reviews

Taicheen Ng

The Singapore Government undertakes intermittent reviews of the policies and pedagogies of Chinese Language. Although the 1979 Goh Keng Swee Report covers the education system as a whole, it has a definite impact on the teaching of Chinese Language. Specifically, it recommended that all students learn English Language and a Mother Tongue Language (Chinese, Malay, or Tamil), and for most part of the curricula, English Language is the medium of instruction. This rendered Chinese Language as a stand-alone subject. With this change, challenges in the teaching and learning of Chinese gradually emerged. Following the 1979 review are another four reviews focusing specifically on Chinese Language, and the latest is the 2010 Mother Tongue Language Review Committee's report, "Nurturing Active Learners and Proficient Users". The author summarises the five reviews which span over the past 35 years and makes a critical review of them.

The Present: An Overview of Teaching Chinese Language in Singapore

Cheelay Tan

In Singapore's unique, complex linguistic environment, it is common to have Chinese Language learners from many different backgrounds in the same classrooms; this is why Singapore is nicknamed as a "language laboratory". From different viewpoints, the author examines the changing linguistic environment and response strategies, including theories of second language acquisition and the distinguishing features of Chinese Language teaching in Singapore. The author further argues that Singapore's approach to teaching Chinese as a second language has to be diversified and specialised for it to be consistent with Singapore's ever-evolving sociolinguistic landscapes and Chinese Language teaching environments.

The Future: New Directions of Singapore Chinese Language Teaching

Cheekuen Chin

This article is based on the key recommendations of the "Nurturing Active Learners and Proficient Users", 2010 Mother Tongue Languages Review Committee Report, and offers constructive thoughts on four different aspects: teaching philosophy,

curriculum planning and development, teaching and instructional materials, and teaching assessment. It maps out the direction Chinese Language teaching should take under the current social language environment. The author suggests that to provide every student with a suitable Chinese Language curriculum, there is a need to integrate the learning of Chinese Language into the students' daily lives. This will allow students to enjoy learning Chinese Language and use the language actively in their everyday life thus achieving the goals of the most recent curriculum reform.

Using ICT in Teaching the Chinese Language: Practices and Challenges

Cheelay Tan and May Liu

The twenty-first century is the era of communication and knowledge construction, and hence Information Communications Technology (ICT) literacy has become one of the critical twenty-first-century skills, as well as to enable Computer-Assisted Language Learning (CALL). This paper discusses the current practices of using ICT in the teaching of Chinese in Singapore, which include integrating ICT into Chinese Language curriculum goals and assessments, classroom teaching, as well as student learning. Localised ICT platforms used in the teaching and learning, such as iMTL and 10C, will be briefly introduced. It will then reflect on the use of ICT in Chinese teaching in Singapore and suggest its possible future direction. Finally, this paper proposes to coin a new term ALICT, which is Authentic Learning with ICT, and refers to the use of authentic materials and context for immersive learning under an ICT-assisted environment.

Chinese Language Teachers' Perceptions of Training Needs and Perceived Student Difficulties

Kaycheng Soh

This article reports a survey of primary and secondary Chinese Language teachers on their training needs and perceptions of students' learning difficulties. The main findings show that a great majority of the teachers indicated the felt needs for training, more for skills involving Chinese script than for oral skills. There is a strong correlation between the teachers' felt training needs and their perceptions of students' learning difficulties.

Consistently for all language skills, there is a *non-linear* trend, whereas primary teachers perceived Levels 1 and 4 as being more difficult for students to attain than Levels 2 and 3. For secondary teachers, the perceived student difficulty increases from Level 5 to Level 7, with a smaller gap between Levels 6 and 7. This cautions against the common assumption of a linear progression in course design. Training

need is felt for the teaching of exceptional students, composition writing, ICT and media for teaching, and alternative or interesting pedagogies. And teachers perceived that students' main difficulties are word recognition (vocabulary), lack of interest/positive attitude/confidence, and Hanyu Pinyin.

Assessment Literacy of Singapore Chinese Language Teachers in Primary and Secondary Schools

Limie Zhang and Kaycheng Soh

Language assessment literacy refers to language teachers' knowledge of measurement principles and practices as well as applications of classroom assessment. The survey is especially concerned with language assessment issues. The article reports on Singapore primary and secondary Chinese Language teachers' knowledge of language assessment and relevant measurement concepts. The survey involved primary and secondary Chinese Language teachers who responded to a 40-item *Assessment Literacy Scale* crafted by the researchers. The scale covers four domains of assessment: nature and functions of assessment, design and use of test items, interpretation of test results, and concepts of reliability, validity, and basic statistics.

Results at the subtest and item levels revealed the teachers' shortfalls in all four domains of assessment literacy and indicate their training needs. The respondents were able to answer correctly general questions of a common-sense nature but were weak where specific technical knowledge is concerned. Findings from this study have implications for primary and secondary Chinese Language teachers' training in assessment literacy.

Familiarity and Use of Language Teaching Strategies among Chinese Language Teachers

Kaycheng Soh

Using an adapted list of language learning strategies (LLS), the study looks at familiarity and use of LLS among primary and secondary teachers of Chinese Language in Singapore. The listed LLS consists of memory strategies, cognitive strategies, social strategies, metacognitive strategies, and determination strategies. The survey results show that the teachers, especially those teaching in the secondary school, are familiar with many of the listed LLS but have not used them frequently.

The teachers also identified memory, written expression, and writing of Chinese characters the most difficult tasks for students. While primary and secondary teachers were low in the use of cognitive strategies, primary teachers were also low on social strategies and secondary teachers also low in memory strategies and determination strategies. Implications for training and further research are discussed.

Chinese Language Teachers' Perception of Social Status and Job Satisfaction

Kaycheng Soh

With reference to the *Global Teacher Status Index* and the *Framework for the Analysis of Teachers' Self-Efficacy and Job Satisfaction,* this survey finds out how Chinese Language teachers in Singapore perceived their status in the society and satisfaction with the teaching career. Half of the surveyed teachers compared themselves with the social worker and slightly more than one-tenth engineer and nurse. The professional nature of the teacher's work was considered the most influencing factor on social status. Within the school context, primary teachers compared themselves with English Language teachers and considered the professional nature as the most influencing factor, but secondary teachers compared themselves more with non-science teachers and considered influence on students' future as the most influencing factor. Chinese Language teachers were generally satisfied with their job and saw themselves as being efficacious on the job. However, a small proportion of them would like to change schools and even regretted that they chose to become a teacher. The findings were generally similar to those found internationally.

Issue in Bilingualism: English-Chinese Code-Switching Past and Present

Hockhuan Goh and Kaycheng Soh

Code-switching is the alternation of two codes, and it is a common phenomenon among bilinguals. Singaporeans, being bilingual and multilingual, engage in this in their daily lives. This being a common and daily phenomenon seen negatively, language educators tend to discourage it or even suppress it in the language classroom. However, the opposite view is that code-switching is inevitable in bilingual situation and can be turned around as a way to facilitate the learning of a second language. This article revisits code-switching in the case of Singaporean students learning Chinese Language and English Language concurrently. It hopes to shed light on the Singapore classroom practices and aims to review research studies on code-switching from various perspectives. Thus, code-switching will be given a new look, and its potential in language teaching can be uncovered and tapped upon. Specifically, this article provides an overview of code-switching from international research, followed by highlights of two studies on Singaporean students' code-switching. Building on the reviewed studies, the potential of code-switching will be discussed, and suggestions will be made for practitioners to maximising code-switching in support of Chinese Language learning.

Teaching Chinese Culture in Singapore Schools

Kaycheng Soh

Ethnic Singaporean Chinese students learn Chinese culture through language textbooks and co-curricular activities. Over the years, there has been an increase in primary text of culture-relevant topics. Co-curricular activities take the forms of Chinese music, art, and performance. Chinese traditional festivals are celebrated in schools. A discussion on the three aspects of culture (products, practices, and perspectives) concludes that most of these are achievement cultural products, and a balance with behavioural culture is indicated. An added advantage of teaching Chinese culture is the time and engagement using Chinese Language, and this can enhance the students' learning of communicative skills in the language and the motivation to learn it. It is reminded that, in the context of Singapore being a multi-ethnic-multicultural nation, the ethnic Chinese students also need to learn about the other ethnic groups' cultures to forge interethnic understanding and social harmony.

In sum, while not forgetting the past and even the present, which are the launching pads to the future, the authors are mainly much more concerned with what need, can, and ought to be done in the next few years to come and before the next round of review. In short, the articles are more of a prospective nature than merely a documentation of and lament on what has or could have taken place in Chinese Language teaching in Singapore hitherto.

Singapore is celebrating her 50 years of independence next year. With this auspicious occasion in mind, we put together this volume to share our experiences and views as a way of joining in the joyous celebration.

In the academic world, views vary and opinions differ. We do not pretend to be totally scholarly but try to strike a balance between theory and practice with the hope that teachers, administrators, and policy-makers who have an interest in Chinese Language find this collection of articles informative if not illuminating.

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Part I
Policy and Curriculum

Chapter 1
The Past: A Review of Five Reviews

Taicheen Ng

From 1979 up till the present day, the language policy in Singapore has undergone five major reviews. These include Goh Keng Swee Review (Goh 1979), Ong Teng Cheong Review (Ong 1992), the Ministerial Statement on Chinese Language in Schools (Lee 1999), Report of the Chinese Language Curriculum and Pedagogy Review (Wee 2004), and the 2010 Mother Tongue Languages Review (Ministry of Education 2010). With regard to the review of the teaching of Chinese language, both the Report of the Chinese Language Curriculum and Pedagogy Review Committee and Nurturing Active Learners and Proficient Users 2010 Mother Tongue Languages Review Committee provided clear directions toward implementing a pragmatic and functional system. These five reviews have many recommendations on the teaching of Chinese in primary and secondary schools in Singapore.

Goh Keng Swee Review

Education forms a foundation of a country and language takes on the role of capacity-building and imparting cultural values. Singapore's schools had no consistent media of instruction during the pre-Independence and the earlier part of the post-Indenpedence stages. With Independence in 1965, there was a need to have a common working language to facilitate communication between people of all races and enhance our global competitiveness. Standardizing the media of instruction in schools allowed students to learn both English (for social and development purposes) and their mother tongue languages (for cultural identity reasons).

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After the release of the Goh Keng Swee Review, the Singapore education system underwent a major revamp where streaming was introduced in primary and secondary schools. The first three years of primary school focused on language learning, to allow students to build a strong foundation for the English language and mother tongue languages. Students were channeled to three different streams according to their language abilities: EM1 for students taking both English and mother tongue language at the "first language" level; EM2 for students taking English language at the "first language" level and mother tongue language at the "second language" level; and EM3 for students taking English at the "first language" level and mother tongue language for only oral proficiency. To cater to these three groups of learners, an extended course was also designed for students who needed more time to complete the normal curriculum.

In secondary schools, students were channeled to three different streams: the Express Stream for the higher-ability students, the Normal (Academic) Stream for students of lower abilities, and the Normal (Technical) Stream which is more technically oriented to give students a wider educational choice.

The Ministry of Education also revised the then existing curriculum according to the recommendations and published a new syllabus named *Chinese Language Instructional Materials for Primary Schools* in 1979. The primary aim of this new Chinese language syllabus was to enhance students' interest in the learning of Chinese and develop confident learners who can speak proper Chinese, read extensively, and write fluent sentences and essays. To cater to the less academically able students, a set of supplementary materials named *Special Chinese Language Materials* was designed to stimulate students' interest in the learning of Chinese using simpler texts and innovative audiovisual resources and language games to improve their reading and writing ability.

The diversification of syllabuses and instructional materials took into consideration the students' learning abilities and needs where Chinese language was concerned. This also reflects the beginning of curriculum differentiations with different goals for students with different learning capacities and has since been followed through in subsequent curriculum reviews.

Ong Teng Cheong Review

Moving into the twentieth century, the dominance of the English was significant as it became the main working language in Singapore. The majority of Primary 1 students also came from English-speaking families. With constant exposure to the Western culture, the concern that students were losing touch with their culture and heritage was real. It was then up to Chinese language teaching to take on the role of sustaining Chinese cultural heritage among ethnic Chinese students.

This review hopes to improve the Chinese language standards of students by boosting their confidence in the learning of the Chinese to prevent it from causing stress to students due to their lack of ability to cope with the language. Thus, it was

important to create a conducive environment to learn the language. Some suggestions of the Ong Teng Cheong Review were to teach Hanyu Pinyin earlier instead of waiting until primary four and allow approved Chinese dictionaries to be used for essay-writing in examinations. Consequently, *Chinese for Young Learners* which included short stories and rhymes was published.

The review also recommended to rename Chinese at the "first language" level as "Higher Chinese" and Chinese at the "second language" level to "Chinese." This was to minimize the stigma caused by the names of the subjects, that is, misconstruing "second language" as "second-rate language." Moreover, the listening component which was easier to score was given a higher weighting in the examinations, and more allowances were also made to allow the top 20 % of the students of a cohort to take Higher Chinese instead of the previous 8 %. The Review also suggested the development of the Language Elective Programme to nurture high-ability students who are proficient in Chinese language.

Ministerial Statement on Chinese Language in Schools

In 1999, 43 % of Primary 1 Chinese students came from English-speaking families, resulting in many students facing difficulty in learning Chinese. To adapt to the changes in the Chinese language environment in Singapore, the emphasis of Chinese language teaching was placed on listening, speaking, reading, and writing skills.

In a bid to nurture high-ability students in Chinese, the Ministry of Education introduced the bicultural program. Students in The Chinese High School, Nanyang Girls' School, Dunman High School, and River Valley High School participated in the four-year bicultural programme; their students could choose to take Chinese History and Philosophy lessons in addition to Higher Chinese. When they entered the junior colleges, they would also choose to study Chinese Literature and China Studies.

Nine secondary schools with strong Chinese language and cultural background were then designated as the Special Assistance Plan Schools. Extra financial and other resources were endowed to ensure successful implementation. The first nine Special Assistance Plan Schools were Anglican High School, Catholic High School, Chinese High School, Chung Cheng High School (Main), Dunman High School, Maris Stella High School, Nanyang Girls' High School, River Valley High School, and St. Nicholas Girls' School. In 2000, Nan Hua High School was selected to become the tenth Special Assistance Plan School. Junior colleges which offered the Language Elective Programme were Hwa Chong Junior College, Temasek Junior College, and Nanyang Junior College. Having more schools with a stronger Chinese environment would help in efforts to nurture Chinese-proficient students.

The Ministerial Statement of Mr. Lee Hsien Loong, the then Deputy Prime Minister, proposed flexibility in the learning of the Chinese language to take into due consideration the ever-changing Chinese language environment in Singapore. For this, variants of Chinese language curricula were implemented, with Higher

Chinese for students to gain a better understanding of the traditional values and to attain higher standards of Chinese language. At the other end of proficiency, Chinese Language B syllabus was installed for students who faced difficulties in the learning of the language.

To make the learning of Chinese manageable to most students, conceptually difficult texts were removed and a new set of syllabus *Chinese Language for Primary Schools* was implemented in 2001. Selected classical texts were included in the Higher Chinese syllabus to help students gain a better understanding of Chinese history and culture. Schools were also encouraged to organize cultural activities to enhance students' interest and knowledge in traditional Chinese culture.

Mind-mapping and audiovisual resources like audio recordings of passages and educational videos were also listed in the new primary syllabus to make use of technology and encourage student-centered learning in the areas of listening, speaking, reading, and writing so as to create a student-oriented and interactive learning environment for students.

Report of the Chinese Language Curriculum and Pedagogy Review Committee

In 2004, Wee Heng Tin, the then Director-General of Education, led the Chinese Language Curriculum and Pedagogy Review Committee. The committee was tasked to find ways to further enhance innovation in Chinese language learning and to enhance future global competitiveness of our people, in line with the vision of Thinking Schools, Learning Nation, which was introduced in 1997 by the then Senior Minister Goh Chok Tong.

This Report placed emphasis on differentiated learning as vast disparities among students' ability to learn the Chinese language were noted. It was also noted that developing communication skills and enhancing students' reading and writing abilities were key to improving students' overall Chinese language abilities. The committee recommended that more opportunities should also be given to students who were interested in Chinese history and culture, especially Higher Chinese students who have good mastery of the language.

The committee also recommended the modular approach to cater to students of different language backgrounds and learning abilities, with the belief that as students have varied language backgrounds, differentiated learning would help by customizing learning suitable for various students. Modifications were therefore made according to the modular approach, introducing three different levels which catered to students' individual learning needs and provided a solution to learning difficulties faced by students in class. Teachers were also given white space time for them to design interesting and innovative lessons for students.

At the 2004 National Day Rally, Prime Minister Lee Hsien Loong spoke about Teach Less, Learn More. Teaching less will free up class time and engage students

in meaningful learning and prepare them for their future. Interaction between teachers is key to inspiring students and engaging them cognitively.

In line with Teach Less, Learn More, many schools started to introduce meaningful learning activities into their curriculum, like implementing differentiated learning by allowing students to work in groups with teachers as facilitators and introducing a interactive mother tongue language module which allowed students to learn how to converse in mother tongue language.

Placing emphasis on skills-based education in the twenty-first century, the Ministry of Education introduced the PETALS framework in 2005 which comprises five dimensions of practices, namely, Pedagogy, Experience of Learning, Tone of Environment, Assessment, and Learning Content, which promoted engaged learning in the classroom.

Using newspapers as a resource of teaching Chinese language was then also a key part of curriculum as schools attempted to expose students to the language and encouraged students to use it in daily conversations. An example was the use of *Thumbs Up* (a newspaper published specially for young students) for primary school students to enhance their knowledge of current affairs and promoted the use of Chinese language in their daily lives.

The Chinese Language curriculum was also modified to adapt to changes in the twenty-first century. Primary schools were allowed the flexibility of streaming students to EM1 and EM2, and students were allowed to take Higher Chinese or other Chinese curricula according to their language abilities. There was no change to the streaming of students to EM3 and students in this stream were still able to take oral Chinese language. The streaming system in secondary schools remained unchanged but schools could allow students to take different Chinese curricula depending on their language ability, aptitude, and parents' intent.

Nurturing Active Learners and Proficient Users

The latest review of the learning of mother tongue languages in Singapore was done in 2010, and various pedagogies were recommended to accommodate the changes and diversity in the language-learning environment in Singapore. The Report recommends modifications to be made to teaching and assessment modes so that students can use Chinese effectively and school were to provide resources to cater to students of different learning needs so that a conducive environment can be created for students to learn and use the language. In order to help students have better mastery of the language and use the language effectively to communicate and interact with others, oral interaction was introduced in 2011 to complement the listening and speaking components in Primary 1 and 2 textbooks to allow students more opportunities to use the language during lessons.

At the secondary level, spoken and written interaction is also a focus in Chinese curriculum. Listening comprehension is based on real-life scenarios so that students

will be accustomed to using the language and responding to others in the process of learning. The modified syllabus also comprises of self-directed learning and self-assessment components for students to consolidate the knowledge and skills learned during the lesson. *Character and Citizenship Education* was published in 2013 to instill the six core values of respect, responsibility, integrity, care, resilience, and harmony in the students.

The systematic learning process specially designed for Chinese language learners in Singapore and the change in assessment modes aimed at developing students who are able to use the language to communicate and interact with each other. An example is the upcoming change of oral examination stimulus from pictures to videos to be implemented in 2017.

To ensure the effectiveness of the teaching of mother tongue languages in the changing language environment, continuous improvement and innovation are essential to allow Singaporeans to communicate in their respective mother tongue languages and appreciate their cultural roots.

Influence of the Five Reviews on Chinese Language Curriculum in Singapore

After looking through the five reviews, it is encouraging to see that Singapore's education system has been constantly undergoing changes to improve the ability of Chinese language of students in Singapore.

The Goh Keng Swee Review introduced the bilingual policy in Singapore and appointed English as the first language and mother tongues as the second language. At the same time, streaming was also introduced to ensure that students could complete their studies successfully. Thus, Chinese language is used more as a medium of communication and a tool to promote cultural values.

The Ong Teng Cheong Review emphasized the importance of the imparting of rich Chinese culture and traditional values and not just the use of Chinese as a communication tool. However, there should be a change in the use of teaching methods as traditional methods of teaching might not be able to engage students effectively, especially students from English-speaking families.

The Ministerial Statement on Chinese Language in Schools stresses the opening up of opportunities for more students to take Higher Chinese and introducing the Chinese Language B for students who were very weak in the language. This provided opportunities for those who excelled and for those who were not doing as well to learn the language at a level commensurate to their respective abilities. However, at this point, there was still not much change in the teaching methods used in class.

The Report by the Chinese Language Curriculum and Pedagogy Review Committee did a timely review and revamped the teaching of Chinese language by introducing the modular approach to enhance students' abilities to listen, speak, read, and write and introduced many new types of teaching activities to enhance the effectiveness of Chinese language teaching.

The Nurturing Active Learners and Proficient Users 2010 sets the direction for the teaching of Chinese, teaching students based on their different language abilities with a focus on their oral and written interaction skills, and giving teachers more flexibility to design their lessons and make classroom learning more interesting for students.

We have seen changes in the teaching of Chinese language in Singapore, from the 1979 Goh Keng Swee Review to the 2010 report by the Mother Tongue Languages Review Committee. All these were efforts to ensure that the Chinese Language curriculum is relevant, matches the different needs of students, and ensures that students are engaged in their learning and motivated to study.

In sum, the teaching of Chinese Language in Singapore has to be based on the language abilities of students and cater to their differing needs to give them maximum opportunity to develop their potential. Refinements to the Chinese Language curriculum were made after visiting schools, gathering feedback from teachers, and understanding students' responses toward the existing curriculum. It is hoped that the future reforms to the Chinese Language curriculum in Singapore will be one that is diverse, interesting, and able to prepare our students to face the challenges of the twenty-first century. Moving into the twenty-first century, technology is a tool that we can make use of to create innovative and engaging lessons to give students opportunities to learn language-related knowledge and retain traditional cultural values.

Having reviewed the five Reviews, the present writer would like to make the following practical suggestions relevant to the design of Chinese Language instruction:

1. The curriculum is the most important component of Chinese teaching as it determines the content that is to be taught. The curriculum should be able to stimulate students' interest in learning and their responses toward the learning process. Students should be able to gather knowledge, learn techniques, and use the language effectively when interacting in real-world situations.
2. The number of vocabulary terms taught in each lesson should not be more than what students can cope with so that teachers will be able to focus on other aspects of the lesson and not put undue stress on the students.
3. Themes used in the syllabus should be broad-based and relevant to students' daily lives so that they will be able to relate to what they are learning.
4. Hanyu Pinyin should be included for Chinese words that students are unfamiliar with, especially for the lower primary oral syllabus as it will help students to identify unknown terms when they are doing their oral practice.
5. Emphasis should be placed on the speaking component to allow students to make use of the language in their daily lives and use Chinese to interact with others effectively.
6. The curriculum designed should be diverse and interesting to engage students. Apart from the usual writing practices, interactive tasks should be included in the curriculum to engage students of different learning aptitudes. Examples are activities that can be completed independently and collaborative activities and tasks that require the ability to analyze, classify, and consolidate information.

7. There should be practice questions of differing standards included in the syllabus so that teachers can use the resources flexibly and cater to the needs of different students. Students can also build up their confidence in the language slowly as they attempt tasks of increasing difficulty.
8. Teaching packages and oral resources should be produced for teachers, including audiovisual, multimedia, and ICT resources.

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Chapter 2
The Present: An Overview of Teaching Chinese Language in Singapore

Cheelay Tan

The Current Singapore's Sociolinguistic Background

The sociolinguistic landscape of Singapore has in recent years been a prominent and unique case for language and social study that bestows the nation with a new title of 'language laboratory', besides acclaims like 'Asia's four little dragons' or 'Garden City' (Yang 2011). Indeed, the swiftness and scale of language change in Singapore in the last 30 years may be unprecedented amongst nation states. In multi-ethnic, multicultural and multilingual Singapore, English has now become not only the most important lingua franca but also the dominant language in daily usage amongst the majority of Singaporeans, especially the young. There are two sets of important statistics reflecting the changing linguistic background of Chinese in Singapore:

Firstly, the Census of Population 2010 (Singapore Department of Statistic 2011) highlighted that the use of English as the home language has become more prevalent which is in line with the rise of English literacy especially amongst the younger age groups. Notably, English was the home language for 52 % of Chinese Singaporeans aged 5–14 years. Secondly, in 2009, 59 % of Primary 1 Chinese students' parents reported that they spoke mainly English at home. This was a large increase from 28 % in 1991 (Ministry of Education 2011; see Fig. 2.1).

Figure 2.1 shows the trend of a shift in dominant family language amongst all three races. The gradient of the three lines is steepest for the Chinese, reflecting that it has the fastest shift into speaking English as a dominant family language. Many scholars have even attributed the problems and challenges faced in Chinese-language teaching and learning to this shift in home language environment (Tan 2011; Liu et al. 2006; Goh 2012). While many academic papers have based their

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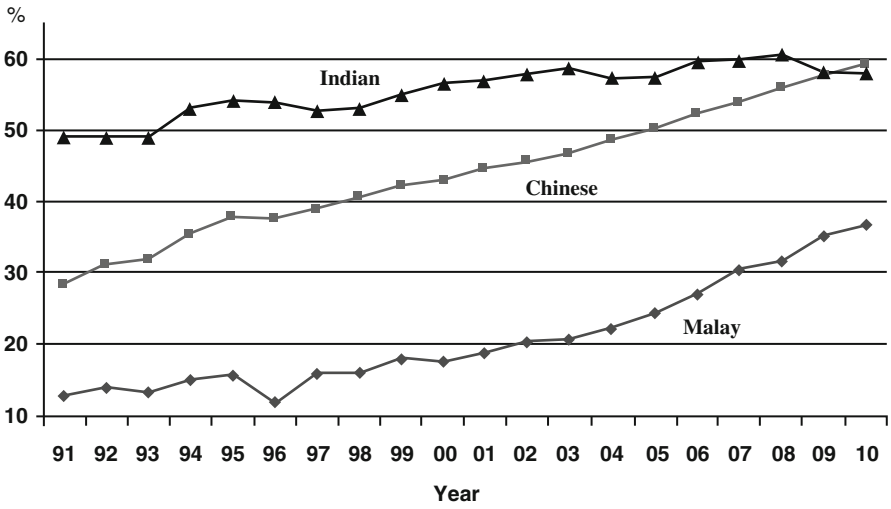


Fig. 2.1 Proportion of Primary 1 students speaking English most frequently at home

Table 2.1 Language P6 students used to communicate with their family (200)

% of P6 students who spoke to their family in	Mother tongue languages (MTL)		
	Chinese language	Malay language	Tamil language
English only and English mostly	38	17	38
English only	8	3	12
English most of the time and MTL occasionally	30	14	26
English and MTL just as frequently	25	33	33
MTL only and MTL mostly	37	50	30
MTL most of the time and English occasionally	25	37	23
MTL only	12	13	7

discussions of the Singapore language environment on the above findings, I nevertheless believe a more accurate portrayal of the language situation amongst students in Singapore is in fact captured in the large-scale Ministry of Education survey carried out in March–May 2010 as shown in Table 2.1 (Ministry of Education 2011).

Table 2.1 depicts a more nuanced language situation which is more realistic and accurate in reflecting Singapore's diverse and complex home language environment. Students were broadly categorised into three main groups based on their dominant language at home: those who spoke predominantly English, those who spoke predominantly MTL (including Chinese, Malay and Tamil languages) and those who spoke both languages just as frequently. The survey shows that 38 % of

Primary 6 Chinese students use predominantly English language at home, which is very close to the 37 % who use predominantly MTL, and the remaining one quarter who uses both EL and CL equally could still be considered a very significant proportion.

Figure 2.1 and Table 2.1 also clearly reflect a unique language scape locally: Chinese Singaporeans, who form about 75 % of the national population, are considerably distanced from the native Chinese environments of China, Hong Kong or Taiwan in language use and exposure. Of course, such a sociolinguistic context is due as much to Singapore's ethnic composition and migrant orientation as it is to Singapore's language and educational policies. From the sociolinguists' viewpoint, the linguistic context, largely dissimilar from native Chinese societies with Chinese as a native language, becomes the basis and reason for Singapore to be seen as a 'language laboratory' with complex linguistic environments. As a multilingual society, the rich interactions and counteractions of languages, the different dialects of various languages become a gold mine for language studies.

With such a sociolinguistic make-up today, Singapore has moved away from the 1900s when Chinese (with its dialects) was used as a first language amongst its Chinese citizens. That said, Singapore is still very different from countries without a Chinese-language environment or Chinese-related historical background or countries where Chinese is studied as a foreign language, such as in Europe or the USA. In reality, with a Chinese environment still in existence, Chinese cultures and traditions still deeply entrenched in daily lives, and the learning of Chinese is still mandatory for Chinese students; the teaching of Chinese in Singapore could not be treated at the level of a foreign language. Moreover, Chinese is a 'mother tongue' that is neither a first language nor a foreign language in Singapore. Singapore cannot be called a society where Chinese is a first language or where Chinese is a foreign language. Chinese language in Singapore should be distinctly positioned in between the levels of first and foreign languages – as a second language – and its teaching and learning be specifically labelled as 'teaching of Chinese as a second language' (TCSL).

By the turn of the Twenty-first Century, Singapore's Chinese-language educators, sociolinguists and education and language policymakers have gradually recognised and affirmed TCSL, though not without a period of transition when many still held on to the former perception of Chinese being the first language for Chinese decedents. A language teaching environment where Chinese is a second language would be increasingly the key to root Singaporean Chinese in their tradition and culture while maintaining a realistic level in the English-dominant sociopolitical macroenvironment.

To keep up with these sociopolitical changes, and to cohere with Singapore's constantly evolving linguistic landscape and Chinese-language teaching environment, Singapore's government began implementing the 'English Language and Mother Tongue' bilingual educational policy in 1979 (Dixon 2005: 625; Goh 1979). This bilingual educational policy, which largely shaped Singapore's educational system, stipulates schools to use English as the medium of instruction for all content

subjects and, at the same time, to teach the three mother tongue languages (Chinese, Malay and Tamil) as stand-alone subjects to the ethnic groups, respectively, regardless of family language (Dixon 2005: 25–26). While scholars have used the term 'English-knowing bilingualism' policy (Ng 2014), the Ministry of Education has described this bilingual educational policy as 'proficiency in English and one other official language' (Pakir 1994: 159) and implemented and refined over the years detailed guidelines involving exposure time, subject-language matching, examinations and attainment requirements (Gopinathan 1998).

Since late 1970s, English has replaced mother tongue languages as the first-language subject and, 'as the common language of instruction, enables all our students to plug into a globalised world' (Ministry of Education 2011: 10). Chinese language, on the other hand, switched from being mainly a first-language subject to a second-language subject. In the last 25 years, Singapore has seen four nationwide Mother Tongue Language Reviews in 1992, 1999, 2004 and 2010. The reason for the Ministry of Education to carry out such large-scale reviews is a direct consequence of the rapid-evolving sociolinguistic trends. The MTL Reviews have nationwide and immense impact on curricular revisions, and they bring about revamp in areas such as lesson content, teaching methods, teaching resources and assessment. To a large extent, the teaching and learning of Chinese in Singapore is directly affected and influenced by these periodic reviews. In the latest MTL Review in 2010, the Mother Tongue Languages Review Committee (MTLRC) has proposed three new goals in its MTL education – the 3 'Cs' of communication, culture and connection. Amongst the three main objectives, the emphasis is on the ability to communicate with others in MTL, which is a most valuable lifelong skill that provides a competitive edge in the child's life and career. Communication was also one of the five learning objectives stipulated by the American Council on the Teaching of Foreign Languages (ACTFL 2006), also the objective of the Common European Framework of Reference for Languages (CEFR) and, of course, one of the key skills in the twenty-first century (The Partnership for 21st Century Learning, P21 2009). In view of the importance of communication for CSL/CL2 students, MTLRC even further recommended to add, besides the conventional skills of listening, spoken, reading and writing, oral and written interaction skills into the curriculum.

Language Acquisition and Learning of Different CL Learners

Singapore's linguistic environment is complex, so even the positioning of Chinese teaching should be at a second-language level and there are a wide range of learners' Chinese-language abilities in schools. This is not the case in many other native Chinese-speaking countries where students are homogeneous in Chinese abilities. In reality, Chinese-language learners in Singapore can further be divided into the following three categories:

1. CNL/CL1 – Chinese as a native language or first language
2. CSL/CL2 – Chinese as a second language
3. CFL – Chinese as a foreign language

In this unique linguistic environment, it is not surprising for one to come across Chinese-language learners from each of these three categories at the same time in the same classroom. In fact, these learners' Chinese-language differences, which include family backgrounds, dominant family language, language exposure and language ability, are so highly evident that one may wonder if they are really raised in the same environment. Such a disparity in Chinese Language abilities can sometimes even be found in one family (when siblings attend different schools and interact with different peers), in a school (where children come from families with different dominant family languages) and even in a classroom (in classes with foreign students who are still required to take up a MTL). In the local classroom, even for CFL learners of different backgrounds, such as a non-Chinese student and a Chinese student from a pure English-speaking background, their learning of Chinese can be different as the latter still has a certain degree of exposure to the Chinese culture (albeit in English) through his or her Chinese parents, grandparents and relatives, while the former has none of such exposure and influence. Because of such great disparity amongst learners, the curricular structure, teaching resources and teaching methods need to have differences amongst individual learners, especially the uniqueness and differentiation amongst learners of Chinese as a second language.

As mentioned, a classroom may even consist of all the three types of Chinese-language learners. The first type of CNL/CL1 students refers to the learners whose mother tongue is Chinese and who are native speakers. These students are in the minority and mainly represented by 'new' immigrants or international students (IS) from China, Taiwan or Malaysia; for instance, the number of PRC students in Singapore schools was estimated to be about 36,000 in 2008 (The Straits Times 2008). Second, there are the CSL/CL2 students who are ethnic Chinese Singaporean students making up the majority of the student population. They converse almost only in English with their peers and only occasionally speak Mandarin. Third, there are also increasing non-Chinese CFL foreign students studying Chinese in mainstream Singapore schools. With the rise of China, Chinese has become the top choice for foreign students in Singapore mainstream schools who are required to take up an additional language subject besides English (Tan 2011).

It would be important for Chinese Language teachers to be aware of and be able to distinguish these learner types, as differentiating them would be the first step to understanding and teaching these learner. Consequently, it is crucial to recognise the most fundamental differences between first-language, second-language and foreign-language learning processes – 'acquisition' and 'learning' (Krashen 1982; Long 1985).

Language is best acquired. Language acquisition refers to the processes by which children naturally grasp their mother tongue. This is mainly the process which CNL/CL1 children acquire Chinese. Language acquisition normally occurs in daily

encounters in the family and community and is mainly an unconscious learning process. It is the mastery of the patterns of a language through great amounts of exposure to the language in social interactions, usually without expert guidance or people correcting the child on purpose. Fundamentally, the process of acquisition does not concentrate on language forms, but focuses on language meanings because language is taken as a whole and internalised. The two oral skills of listening and speaking are not acquired separately from each other but together in daily use. Reading and writing, the two literacy skills, are a different skill set especially with respect to Chinese ideograms that are less tied to their phonetic characteristics in the phonological loop (as compared to English phonics in particular) and hence would still need to be learned in more formal learning settings. Studies have indicated that language acquisition is required, especially before the age of 12–13, in order that a learner gains what is known as a 'native accent' (Scovel 1988; Singleton and Lengyel 1995).

In general, that which is called a 'first language' is mostly gained through the process of language acquisition (Cruz-Ferreira 2011), and most Singaporean children acquired English this way. Only the CNL/CL1 minority who use Chinese as their dominant family language acquired Chinese similarly. The CNL/CL1 learners have the following characteristics in common:

(a) Growing up listening to Chinese from a young age
(b) Beginning to use Chinese to speak after the age of one
(c) Beginning to read in Chinese characters around the age of four
(d) Beginning to write in Chinese characters after entering kindergarten

Such a 'listen-speak-read-write' progression is typical of first-language learners, and they gradually and progressively acquire the four skills naturally (Richards and Rodgers 2014). As CNL/CL1 learners are immersed in the Chinese environment for a long period of time, they receive enormous 'meaningful input', and the repetitiveness and interactivity of such input are extremely high. Hence, even without formal instructions, they can naturally derive and internalise the linguistic rules by making logical connections of pronunciation, vocabulary and grammar. As CNL/CL1 learners have basically mastered the various aspects of spoken language by the time they enter Primary 1, the curricular and pedagogical foci for them should be literacy skills – reading and writing (Long 1996).

On the other hand, language learning refers to the process of studying a language in a formal learning environment such as a school and with a programme and a goal. Usually taking place in the classroom for CSL/CL2 and CFL learners, Chinese learning requires a teacher's conscious guidance, explanation and correction, with CFL learners requiring even higher degree of guidance. Language learning needs to focus on explicit language forms and meanings and to transform knowledge into thoughts and habits. Teachers have to guide these CSL and CFL students to become aware of their ability to monitor their own language conditions, edit, adjust, check and correct their own speech while speaking, as advocated by Stephen Krashen (1982). Under his monitor hypothesis, second-language learners learn the language better when they are explicitly guided.

Furthermore, CSL and CFL learners' *learning* process differs from the *acquisition* process and can broadly be divided into five stages (Krashen and Terrell 1983):

(a) Stage 1: The 'silent stage'. Learners who come into contact with a completely foreign language would first listen quietly, absorbing and accumulating vocabulary. In the first few days or months during this 'silent' period, the teacher does not need to rigidly require that students speak up, but only needs to provide a large volume of listening materials and exercises.
(b) Stage 2: The 'elementary stage of speaking'. At this stage, students can be asked to imitate or speak in simple phrases or short sentences.
(c) Stage 3: The formal 'spoken language learning stage'. At this stage, students can be asked to say out longer or more complete sentences. Teachers can create opportunities to encourage students to challenge their own speaking ability but need not make it a requirement.
(d) Stage 4: The formal 'reading stage' where reading is introduced via character recognition at the onset, with emphasis on the most commonly used radicals.
(e) Stage 5: The formal 'writing stage' comes later than but is in conjunction with the previous stage of commonly used radical and character recognition and reading.

The learning process as described above still roughly follows the 'silent-listen-speak-read-write' sequence on the whole but is more detailed than the acquisition process. A great deal of emphasis is placed on the first three stages of oral skill development, although many CSL/CL2 students who already have oral language exposure in their daily lives can quickly go through or even bypass Stage 1. However, we notice that the oral skill developmental stages, corresponding to the first three stages, are indeed significant and critical for CSL/CFL learners (Jiang and Cohen 2012) and hence should not be rushed through. Laying down oral foundation is most crucial for the smooth transition from listening and speaking to reading and writing at the later stages, but its importance may be overlooked by teachers who are themselves CNL/CL1 speakers and who have only gone through language acquisition and not language learning themselves. A noticeable trait of many CNL/CL1 teachers is that they hurry through the first three stages, especially the seemingly 'less productive' first and second stages, to jump directly into the later stages, sometimes even combining all the language production, including pronunciation, speaking, reading and writing, together too prematurely.

After Stage 3, differentiated and individualised language teaching would need to begin as proficiency levels become widely varied. If resources do not allow for one-to-one individualised teaching, the number of differentiated teaching activities can be increased year by year: for example, in the first year (e.g. Primary 1 or Secondary 1), 20 % of classroom activities can be differentiated learning activities, i.e. in every lesson hour, about 12 min will be allocated to differentiated instruction, assignments, exercises, etc. In the second year, the proportion of differentiated learning activities can be raised to 25 % and in the third year and thence to 30 %.

It is vital for teachers of CSL/CFL to recognise that as students' abilities improve, the differences amongst individual students will become more pronounced. A commonly used CSL/CFL strategy is to split the class into smaller groups with varying abilities. However, if the class size and lesson type do not permit, the proportion of differentiated instruction with differentiated materials has to be increased; of course, this means more preparatory work for the teachers. By making use of group work and collaborative learning, the small number of students in each group will increase the chances for each student to be engaged and to use the spoken language in their increased interaction.

In conclusion, Chinese Language teachers in Singapore have probably a more difficult task than their counterparts in other countries in that they need to first identify, through diagnosis, the three main student types and consequently employ the corresponding pedagogy to enhance language acquisition and learning. In fact, CNL/CL1 students progress from language acquisition (since young) to language learning (usually in the classroom and on literacy skills when they move on the higher levels of reading and writing), while CSL/CFL students progress from language learning (learning the basics of language in classroom) to language acquisition (usually beyond the classroom and when they are confident and competent to start using CL in real-life situations). The implications of these observations for Chinese Language teachers would be important. For the former, CNL/CL1 teachers can concentrate more on the learning and training of literacy skills of reading and writing of higher-level texts in the classroom, as these CL1 students had mostly already acquired the oral skills in their daily lives and family environment since young. For the latter, teachers need to commence with large amount of listening inputs for these CSL/CFL students before moving to the training of spoken skills, as mentioned in the five stages above. Only with sufficient accumulation of learned input can these students start to make use of them beyond the classroom and acquire even more language knowledge in real-life settings.

Teaching of Chinese Language in Singapore

Due to the complicated linguistic environment of our students, the Ministry of Education has been continuously introducing and fine-tuning the Chinese Language curriculum, by offering more courses customised, in terms of curriculum time, modules, textbooks and even pedagogy, to the needs and abilities of our Chinese-language students.

Just looking at primary school levels alone, the total types of Chinese courses can be as many as four, in increasing level of difficulty to suit the students' Chinese Language proficiency:

(a) Basic Chinese (for Primary 5 and 6): Mainly for students who are foreigners and/or exempted from CL examination requirements
(b) Chinese: For the majority of CSL and CL2 students
(c) Higher Chinese: For students with higher proficiency and aptitude in CL

Table 2.2 Curriculum time for different Chinese courses at primary levels (introduced in 2015)

	Primary 1	Primary 2	Primary 3	Primary 4	Primary 5	Primary 6
(a) Basic Chinese					2.5 h	2.5 h
(b) Chinese	6 h	6 h	4.5 h	4 h	4.5 h	4.5 h
(c) Higher Chinese	7 h	7 h	5.5 h	5 h	5.5 h	5.5 h

Table 2.3 Time allocation for different language skills of different CL courses

	Basic Chinese (%)	Chinese B (CLB) (%)	Chinese (Normal Academic) (%)	Chinese (Express) (%)	Higher Chinese (HCL) (%)
Listening and speaking	65	50	40	35	25
Reading	25	30	30	35	30
Writing	10	20	30	30	45
Total	100	100	100	100	100

Table 2.2 shows that the latest curriculum times for these primary CL courses vary as well, increasing with the difficulty of the course (Ministry of Education 2014).

In addition, primary school Chinese Language curriculum had since the 2004 MTL Review introduced a 'modular approach', which is customised according to the CL2 learners' differentiated backgrounds and abilities. The modular approach stipulated that 70–80 % of curriculum time is to be dedicated to the core module and 20–30 % to either enrichment curriculum or school-based curriculum and also the bridging module for the weaker students (Ministry of Education 2014). This modular system has injected an element of flexibility into the curriculum which allows teachers to adjust the materials and difficulty accordingly, relying even more on customised pedagogy, such as differentiated instructions and differentiated texts (Tan et al. 2009).

The Chinese courses in secondary levels are even more varied, that is, besides the three courses above, there are Chinese Language B (B for basic) and Chinese (Normal Academic), depending on the level of the Chinese Language, as well as the course the student is enrolled in. The times allocated to each of the language skills are different for the different courses, differentiated according to the students' abilities and natures of the courses, as shown in Table 2.3. In fact, the principle of the time allocation fit the different emphases of the students: the higher-ability (HA) students, usually in the Higher Chinese course, have the most time allocated to writing (at 45 %) and the least to listening and speaking (at 25 %); the lower-ability students, usually in the Basic Chinese course, have the most time allocated to listening and speaking (at a very high 65 %) and the least time to writing (only at 10 %) (Ministry of Education 2010).

Now, with a better understanding of the CL curriculum and student profiles in Singapore, we shall now turn our focus to the teaching of Chinese to the largest group of local students – the CSL/CL2 learners. The ultimate aim of CSL/CL2 teaching is not only to teach the language and the many specificities within its

knowledge domain but also to nurture the students' interest in learning and subsequently in using Chinese.

To achieve this ultimate aim, teachers need to first understand and then to make best use of the multilingual environment to sustain the CSL/CL2 students' interest and use of Chinese Language. This can be described in terms of the four key skills of listening, speaking, reading and writing:

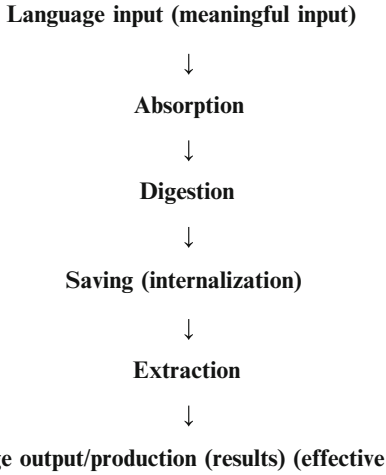
(a) Listening: In terms of easy access of CL listening resources and opportunities, there actually exists a 24/7 environment in multilingual Singapore with at least four Chinese Language radio stations, two free-to-air Chinese Language TV channels and countless real-life situations. Without much effort and inconvenience, CSL/CL2 students can listen to quality Chinese spoken language from mass media, daily encounters or even Chinese-speaking friends and relatives.
(b) Speaking: CSL/CL2 students usually do not have many opportunities to use Chinese in their social environment with their family members and especially with their peers who are mostly English speaking. However, more often than not, speaking in Chinese Language with a Chinese-conversant person can actually be a conscious choice they can make. In the larger environment of Singapore society, these students could speak to many of their Chinese Language teachers and staff, canteen operators, shop owners, sales persons, transport personnel, man on the street, neighbours, relatives especially grandparents and CNL/CL1 classmates. These Chinese Language speakers are very important resources that can be tapped into by the teachers to advocate learning beyond classroom. A commonly used and highly effective method to tap on these external resources is task-based language teaching (TBLT; Long 2000; Gass and Varonis 1985), which utilises authentic language to do meaningful tasks, sometimes even in real-life situations, using the target language.
(c) Reading: Authentic Chinese reading materials, though not as prevalent as English sources, are in fact quite easily available in the local context, such as the newspapers, magazines, signboards, road signs, advertisements, notices, etc. It is a matter of raising awareness and rendering these materials meaningful by teachers' instructions or through TBLT strategies. Parents too, can consciously guide their child in engaging Chinese materials to increase the chance for CSL/CL2 children to read Chinese before entering preschool.
(d) Writing: Writing is almost certainly the least used skill amongst the four skills. Besides school work, CSL/CL2 children usually do not have the opportunity and interest to write in Chinese. Furthermore, with the progression of technology, including keyboarding and voice-to-text input methods, it will become even rarer for children to write in Chinese. Using Chinese writing in an interactive and authentic manner, such as note-writing and interactive letter-writing, will encourage children to use the language even after their schooling years. Besides the more conventional understanding of the concept of 'writing', which usually means the handwriting of Chinese character, we can further expand the concept of 'writing' to include all forms of production of Chinese characters and expressions. This means that 'writing' will include handwriting, typing, optical recog-

nition input, voice-to-text input, etc., as long as Chinese characters and expressions are produced as an end product. While I certainly do not advocate the elimination of handwriting practices and learning, I believe we have to recognise the undeniable progression to an era whereby ICT-assisted and ICT-oriented input becomes even more ubiquitous. ICT-assisted input will be a skill which our students need to learn and develop, so as to encourage them to be even more willing to produce Chinese texts in their daily lives. And the good news is that ICT-assisted input will undoubtedly become even more effortless and convenient with the advancement of technology and even artificial intelligence.

From the above observations, it is palpable that Singapore's second-language learners have too few opportunities to be exposed to Chinese, especially before entering school. However, it also shows that there are ample and easily available Chinese Language materials in their living surroundings if teachers and parents help them make the conscious choice to be engaged with Chinese. To make up for this lack of exposure and engagement, the CSL/CL2 students need a curriculum with an even more rigorous and systematic structure as well as more curriculum time to develop their four language skills.

In primary school, Singaporean students only spend about 20 % of their curriculum time learning Chinese, as all other subjects are taught in English and take up most of the curricular time. Hence, teachers need to help the students overcome this time constraint by extending their learning beyond curriculum time and the classroom, possibly through pedagogy such as TBLT and 'seamless learning' or what is called in-and-out-of-classroom learning (Wong et al. 2010). We can take reference from the St. Lambert bilingual immersion programme, first aimed to develop bilinguals in St. Lambert, Canada, in 1965. Their Early Total Immersion Programme, which started with 100 % immersion in the second language at early infant stage, was the most popular entry level programme (Baker and Jones 1998: 496). For preschoolers in the Singapore context which is dominated by the English language, teachers and curriculum specialists should even more seriously consider increasing curriculum time for CL from the current 40 % for the majority of preschools, to as high as 100 % for preschools with children with little or no Chinese Language exposure. According to the St. Lambert's bilingual immersion programme, the 100 % second-language immersion can last for 2–3 years, before reducing to 80 % for another 3–4 years and finally to 50 % during the junior school period. It is crucial to note that CSL/CL2 learners are unable to benefit from a curriculum that is designed for CNL/CL1 learners, and hence CSL/CL2 teachers need to design more targeted, selective and systematic pedagogy based on language learning theories.

Several theories about language learning, such as the input hypothesis (Krashen 1985), the language processing hypothesis (Bialystok 1991; McLaughlin 1983; Schmidt and Lee 2005), the associative learning theory (Ellis 2005; Gasser 1990) and the processing instruction theory (van Pattern 2003), have all raised the point that when learning a language, whether it is being studied as a first or second language, one process is similar. This process simplifies and models the 'input-output' language learning flow:



The actual language teaching-learning process is much more complex than this flow chart shows. However, this model is still accurate and realistic in general. First, we can define 'input' as listening and reading and 'output' as speaking and writing. Regardless of whether learners are learning Chinese as a first or second language, they need to first receive sufficiently large volumes of 'input' of the target language. It is worthwhile for teachers to note that the materials to form the 'input' usually meet three broad criteria:

(a) Meaningfulness
(b) Structured
(c) Recurrence

After repeated 'meaningful input', learners can gradually digest the materials and convert these contents as mental lexicon, i.e. to save lexicon, vocabularies, semantics and syntax into their cognitive corpus. Eventually, these information (including character forms, words and sentence structures) will be internalised into the learners' linguistic systems for the learners to be able to draw upon whenever required and to create 'output' in the form of speech or writing. We can then term this as 'effective output' (as it achieves effective communication and message delivery).

Aligned with second-language learning theories (McLaughlin 1983; Schmidt and Lee 2005), the Chinese-language teaching in lower primary (Primary 1 and 2) should also model the 'input-output' language learning flow and be more concentrated on teaching the skills of listening and speaking. The second-language learners at this level need to be fed a sufficiently large volume of meaningful spoken Chinese materials (meaningful input) that they can easily comprehend, preferably authentic materials that are easily available in their surroundings. Only then will they be able to use Chinese to communicate in situations of daily social interactions and later, and to create meaningful, understandable messages or effective output. In addition, it is further argued that it is more important for students to first grasp the

skills of speaking and listening, instead of learning the official Chinese phonetic system of Hanyu Pinyin. The present writer's view is that this is because Hanyu Pinyin will only provide limited help in reading as it is only an intermediary tool or an additional agent (and not the Chinese character itself), and it cannot effectively enable learners with the most pressing communication need of daily life: the listening and speaking skills that are essential in social interactions.

While there are many pedagogies that can be applied based on differentiated instruction, one vital CSL/CL2 pedagogy which is in line with the research on second-language acquisition is collaborative learning (CoL) where learners learn together and progress towards knowledge equivalence prior to, during and subsequent to CoL (Weinberger et al. 2007). Members within the collaborative group become similar with respect to their knowledge and acquired mutually improved understanding of the topic concerned. CoL is an especially important teaching and learning strategy for CSL/CL2 learners as the learners' active interactions in the target language with other learners provide a critical learning process: the negotiation of meaning. Only in these authentic interactions will the teaching and target language become meaningful and thereby internalised. Not only are ideas and language skills externalised amongst peers, the positive influence, motivation and peer correction are crucial in nurturing their interest in the Chinese Language.

Generally speaking, students with different starting points require differentiated and specifically designed curricula. For learners of a foreign language, and even learners of the language as a second language, who begin from a lower level, they need to begin with a curriculum with the primary foci of listening and speaking. I have briefly described the differences between first- and second-language learning processes versus foreign-language learning processes above, but in principle, both share certain similarities in language learning. Understanding student differences is paramount for teachers to avoid using course material and methods for first-language learners to teach second-language learners or to use second-language materials and methods to teach first-language learners. And identifying student similarities enable teachers to group the similar ones together to use appropriate teaching methods for the same group of students, who are of similar linguistic abilities. Such grouping techniques need to be differentiated according to the needs and inclinations of students in specific classroom settings and based on pedagogical goals. For instance, CNL/CL1 or higher-ability (HA) students, CSL/CL2 or middle-ability (MA) students and CFL or lower-ability (LA) students could be grouped separately and accordingly to their specific language skills, and differentiated materials and instructions could be given to each of the groups with different teaching outcomes. In other instances, grouping of students with mixed abilities could also be employed at times, so as to encourage peer learning and sharing, such as for the HA students to guide and help the LA students. In yet other instances, students could also be grouped according to their learning styles, such as those of different modalities, that is, whether if they are visual, aural, read/write and kinesthetic learners, and content inputs and learning process could be adjusted accordingly.

On the whole, the fundamental principles of language mastery, whether they are for first-language, second-language or foreign-language mastery, share many

similarities. However, in terms of language teaching theory, curricular framework, curriculum content, lesson plans, teaching methods, learning strategies, etc., there are still fundamental differences amongst the teaching of a language as a first, second or foreign language. The teacher's ability to incorporate fundamentally differential teaching strategies for first- and second-language learners will be crucial, and their inability to adopt suitable teaching strategies will affect the teaching effectiveness. Especially from a learning point of view, successful language teaching means that the student has learned the skills to actually use the language comfortably. For the Singaporean learners of Chinese as a second language, becoming 'active learners' and 'proficient users' has been the ultimate goal of the mother tongue language policy (Ministry of Education 2011: 17).

Conclusion

In conclusion, with the changing family language trends and student backgrounds, most students in Singapore would learn Chinese at the second-language level. It is especially crucial for Chinese-language teachers educated in their first-language environment, or in China and Taiwan contexts, to adapt, retrain and carry out the teaching of Chinese as a second language. Moreover, educational and curricular planning will need to fully make use of the unique linguistic, cultural, and environmental advantages in the teaching of Chinese language. Meanwhile, there is a need to continue revamping the present curriculum framework which has been more inclined towards first language in the past and consider the perspectives of second-language learning and the fast-evolving family language environments.

If the above suggestions could be made possible by concerted efforts amongst parents, educators and policymakers, the students can still master Chinese in conditions where they learn it as a second language. Course milestones, teaching resources, teaching methods and assessment would need to be revised in the process, but not necessarily at the cost of lowering expectations. Instead, changing the direction and focus of Chinese-language teaching in Singapore and utilising second-language pedagogies and more effective and appealing learning tools are important measures. It is imperative that these changes have language acquisition theory as their foundation. There is a need to conduct research on teaching methods for Chinese as a second language as their strategic basis. These changes need be always in the forefront view of language planning officers, and in-service teachers. These are the most important changes to the Chinese-language teaching that will nurture, grow and improve the Chinese of all Singaporean students.

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Chapter 3
The Future: New Directions of Singapore Chinese Language Teaching

Cheekuen Chin

Entering the twenty-first Century, the rate of globalisation speeds up with the advent of the knowledge economy era fuelled by information. The world is developing to become a multilingual environment, and more countries have realised the advantages of mastering multiple languages in a highly competitive globalised environment. To survive in an open economy, Singaporeans need to master multiple languages to maintain a high level of competitiveness. It is a proficiency that ought to be possessed not only by a small section of the population.

Singapore has been implementing bilingual education since Independence in 1965. Bilingual education has become a cornerstone of Singapore's education system. English connects her people with the global economy, while Chinese language keeps Chinese Singaporeans rooted in their cultural heritage and strengthens their sense of identity. Moreover, with the rise of China and India, learning mother tongue languages (MTLs) will gain increasing relevance and provide students with a competitive edge (Ministry of Education 2011: 10). Thus, bilingual Singaporeans will be able to communicate with the East and West and to relate with communities of the associated cultures, as well as establish a stronger cultural identity of their own.

The language environment in Singapore has evolved over the past 20 years. According to the survey conducted on the home language environment of students by the Ministry of Education (2004, 2011), there is an increase in ethnic Chinese families adopting English as the most frequently used home language while families using both English and Chinese are increasing as well. In other words, Singaporeans are becoming increasing bilingual. However, at the same time, the survey shows that the adoption of Chinese as the most frequently used language is still prevalent. The home language background of Chinese Singaporean students has shown multiple characteristics. Chinese Language teachers have to teach classes with students of increasingly varied levels of proficiency in Chinese language and

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cultural backgrounds. Chinese Language classrooms have become 'differentiated classrooms'. These classrooms may have students from China, Taiwan, Hong Kong and Malaysia who have higher Chinese proficiency levels and students from other Asian countries and local Malay and Indian students who are learning Chinese language. In such cases, the proficiency levels of students learning Chinese can be expected to be much varied. Having students of different cultures, language backgrounds and ages in the Chinese Language classrooms brings about a tremendous challenge for the curriculum design and teaching of Chinese Language.

Singapore's Mother Tongue Curriculum and New Teaching Situation

With the trend of an evolving language and culture diversification in the local and global environment, the Ministry of Education convened the Mother Tongue Languages Review Committee (MTLRC) led by the Director-General of Education in January 2010. The MTLRC was tasked to evaluate the evolving language trends and the impact on the teaching and learning of MTLs in Singapore. The Review was to propose appropriate strategies for MTL teaching and learning, given Singapore's unique context in the Twenty-first Century.

In Singapore, MTL teaching is more than just a question of language teaching; it shapes the core of a nation's language policy. To adapt to the rapid changes in the sociolinguistic environment, Singapore has conducted reviews on mother tongue curriculum and pedagogy periodically since the implementation of the New Education System in the late 1970s following the Goh Keng Swee Report (1978). Since then, there are another four reviews and each round of review and the ensuing reform are driven by reports published by review committees. These committees involved political leaders, university professors, school principals, front-line teachers, parents, community representatives and Ministry officers. The committees analysed the then current and future development of Singapore MTL teaching and proposed key recommendations. After the publication of each report, the Ministry of Education would start re-organising the curriculum and re-designing of pedagogy, followed by the writing of new instructional materials, conducting experimental teachings and vetting instructional materials according to feedback from teachers and students. A new set of instructional materials would be released beginning in the following years progressively. Thus, it took at least two years of planning and experimental teaching to develop new instructional materials from the publication of each report.

The *Nurturing Active Learners and Proficient Users – 2010 MTL Review Committee Report* (hereafter, the Report; Ministry of Education 2011) is the latest report on MTL curriculum and pedagogy reform. The recommendations proposed in the Report will impact primary and secondary schools' Chinese Language curriculum and pedagogy for the years 2014–2022. Before writing the Report, the Ministry of Education conducted a survey in 2010 on the home language of primary

Table 3.1 Home language of Singapore Primary 6 students

Language spoken at home	Percent (%)
CL only and CL mostly	37
EL and CL just as frequently	25
EL only and EL mostly	38

Source: Ministry of Education (2011: Annex B, Table B1)

Table 3.2 Importance of and interest in learning Chinese language

	Primary 6 (%)	Secondary 4 (%)
Believed it was important to study Chinese	95	87
Enjoyed Chinese lessons in school	90	76
Liked learning Chinese	88	69

Source: Ministry of Education (2011: Annex B, Table B2)

school, secondary school and junior college students from three ethnic groups (N = 9543). The survey clearly shows that the home language environment of ethnic Chinese families has multiple characteristics. Table 3.1 summarises the home language environment of Primary 6 ethnic Chinese students in Singapore.

Compared to the situation over the past 20 years, the percentages of families who adopted English as the most frequently used home language rose from 20 % in 1992 to 38 % in 2010 (Ministry of Education 1992, 2011; Cheah 2001).

The MTLRC also conducted a survey on Primary 6 and Secondary 4 students. According to the survey results, Chinese was deemed an important subject by a great majority of students. Students of younger ages also enjoyed learning mother tongue more (Table 3.2).

Both Primary 6 and Secondary 4 levels are the last year of the primary and secondary education, respectively. Results collected from the study are able to present the attitudes and thoughts from students who have completed the Chinese language curriculum of the two education phases. The survey also found that home language influenced students' attitudes and proficiency in MTL. Fewer students from English-speaking homes were found to like learning MTL (Ministry of Education 2011: 95). It was also found that Chinese Language B students, taking the syllabus catered for students with difficulties in learning Chinese, were predominantly English-speaking and have less positive attitudes. A majority of them lacked confidence in speaking Chinese. For these reasons, the next round of Chinese Language curriculum and pedagogy reform needs to place great emphasis on these important factors that will influence the teaching effectiveness of Chinese in the near future.

The MTLRC also made study trips to Australia, China, Hong Kong, Taiwan, India, Malaysia and the USA and interviewed educators, experts with extensive experience teaching in multilingual environments and students to understand their

language teaching progress and to pick up learning points in preparation for the next round of pedagogical reform. It was observed that even in those societies where students are native speakers constantly exposed to an environment where the dominant mother tongue is used extensively in everyday life, there is continued investment in making language learning relevant. Experts from these countries believed that the most effective way of learning is to communicate in real-life scenarios using the language, regardless of whether the learner is in a MTL-dominated or multilingual environment. The main direction of the current language teaching is to let students apply what they have learned (Ministry of Education 2011: 12–13).

With the understanding of the local language context and making reference to language teaching experiences in various countries, the MTLRC presented the Report in February 2011, proposing a new direction for the MTL curriculum. The MTLRC outlined three broad objectives in the teaching and learning of MTLs: communication, culture and connection (Ministry of Education 2011: 13). There are three reasons behind the objectives. Firstly, it is an advantage to be proficient in both MTL and English language. Singaporeans will have a competitive edge if they can communicate with people across the world in English language and MTLs. Secondly, learning MTLs enables the students to understand and develop their unique identity through a deeper appreciation of culture, literature and history. Thirdly, being proficient in MTLs enables students to connect with communities across Asia and the people who speak their language or share their culture (Ministry of Education 2011: 36–37).

To achieve these objectives, there is the need to help students in using Chinese language as a living language. The core recommendation of the Report is to provide learning opportunities for students to practise what they have learned, allow students to enjoy learning Chinese language and enable them to master the language. There is a significant difference between this ideology and the ideology of past Chinese Language curricula that mainly emphasise the training of language skills and transmission of cultural values. The ultimate objective of this round of Chinese Language curriculum and pedagogy reform is to make Chinese language a living language that students use to communicate effectively in a variety of real-life settings. As such, the Report proposes that Chinese Language curriculum should be relevant to the everyday life of students and also incorporate their interest into learning. The learning of Chinese language needs to be aligned with the language standards of students. The teaching of Chinese language needs also to promote learning through assessment while changing the mindset that learning is for good grades. It further needs to improve students' oral proficiency. Furthermore, the teaching of Chinese Language has to make good use of information technology (IT) to promote the development of self-directed learning.

The Report rightly makes recommendations that are aligned with the current language teaching philosophy. However, to implement the recommendations proposed by the Report or, rather, to achieve the expected outcomes for this round of Chinese Language curriculum and pedagogy reform, curriculum planners need to approach it from four aspects: (1) teaching philosophy, (2) curriculum planning and development, (3) teaching and instructional materials and (4) teaching assessment.

It is especially important to ensure that students from different language backgrounds and learning abilities are able to enjoy and love learning Chinese language and to master the language well. We now turn to elaborate these four aspects of this round of curriculum and pedagogy reform.

Teaching Philosophy

To cope with the multiple characteristics of Chinese language learners in Singapore's primary and secondary schools, it is important to first achieve equity in educational provisions. A subtle difference between equity and equality is that equity does not refer to teaching students the same curriculum content at the same pace or to having students take examination papers of the same standards but, rather, to provide students with opportunities to learn Chinese language as effectively as possible and to attain as high a standard as possible with due considerations for their abilities and learning needs.

Bilingualism is the cornerstone of Singapore's education policy. However, from the perspective of language learning, it is unrealistic to demand all Singaporean students to achieve the same proficiency level in two languages. According to the research conducted by comparative linguist W. Mackey (1987), none of the countries which implemented bilingual education have totally succeeded, and none of the bilingual societies will demand every citizen to master two languages. In consideration of the difference in learning abilities, language teaching needs to cater to the needs of students from different language backgrounds and with learning abilities.

As shown in the data provided earlier on, ethnic Chinese families in Singapore have shown diverse patterns in language use at home. Different language environments provide children with different opportunities to get into contact with Chinese language and culture. Some children are able to learn the language well, others attain average language proficiency, while some had below-average language proficiency. This is an inevitable situation in an environment with diverse patterns of home language use. From the viewpoint of equity in education, Singapore's Chinese Language curriculum should provide opportunities for students from different language backgrounds to learn and master the language to varied degrees of proficiency. Students should be encouraged to learn the language and reach the highest level of language they are capable of attainment. Chinese Language curriculum then should not demand students to attain a language proficiency level that is beyond their reach, nor should it limit their development.

To allow students from different language backgrounds, abilities and interest levels to enjoy learning and using Chinese, Chinese Language curriculum planners must work creatively and adopt differentiated instruction for different students to ensure that all can perform their best and achieve the highest proficiency level they are capable of. The curriculum should have different language requirements for different types of students. In this way, students stronger in the language need not

learn Chinese at a proficiency level that is below their capabilities to accommodate weaker students and be restricted from achieving more. Nor do weaker students need to adapt to the high proficiency levels of other more proficient students and end up struggling in learning and facing long-term setbacks or failures, resulting in them developing a distaste for their own language and culture. It is only through allowing each particular student to learn Chinese language in an environment that suits their developmental needs that we can best achieve the principle of equity in education and ensure that students learn the language actively and become proficient users.

Curriculum Planning and Development

When designing the curriculum goals and curriculum standards, the central consideration for curriculum planners should be to let students study the Chinese Language curriculum they are capable of excelling in and build their communicative proficiency in the course of learning. Besides, in view of the Singapore's language policy which specifies that Chinese is a compulsory MTL for all ethnic Chinese students and there is an increasing trend of non-Chinese students learning Chinese as a second language, there is a need to modify the curriculum to cater to the learning needs of students from diverse language backgrounds and abilities.

Planning To enable MTL teaching and learning to adopt differentiated instruction for students of different proficiency levels, the planning of the Chinese language curriculum needs to be flexible. This means that students should be allowed to opt for a Chinese language curriculum that best suits their abilities, needs and interest. The curriculum should also allow students to subsequently change the curriculum based on their performance. With the disparity in proficiency levels among Chinese language learners getting greater, it is more pressing to comprehensively cater to the learning needs of every student through effective Chinese language curriculum and teaching. The new phase of curriculum reform should be based on students' grasp of Chinese language, learning progress and their potential. In other words, every student should have the right to choose a Chinese Language curriculum that they can cope well with. In the process of schooling, if the student (including non-Chinese learners) demonstrates great interest and ability in learning the language, they should be allowed to advance to a higher level of Chinese language. Only when they are able to cope with curriculum standards will students want to learn and enjoy the learning of the language and become active learners.

To make the Chinese Language curriculum more flexible, one possible way would be to implement 'Subject Streaming' in Chinese Language teaching. Singapore's Chinese Language curriculum should adopt a 'multiple syllabuses' development model. For the majority of students with an average proficiency level, the goal of learning could be to communicate effectively using Chinese language and to be equipped with the skills to read general materials and local news in the language. They should also have an adequate knowledge in Chinese culture. For

this group of learners, the Chinese Language curriculum should first develop the students' oral abilities, so that their reading skills can be built upon a strong oral foundation. Students should be exposed to news articles of different topics. It is important to cultivate students' reading skills in reading articles related to mass media that are highly relevant to their everyday life. This will allow students to feel the relationship between their everyday life and the learning of Chinese. The curriculum should also introduce and let students gain an understanding of Chinese culture and history. This group of students should also learn basic skills of translation between English and Chinese and practical writings to equip them with basic written and communication skills.

For students with higher Chinese proficiency level and ability, the goal of learning could be to communicate fluently and develop higher-order thinking skills using Chinese language, read and appreciate Chinese literary works, express insights using Chinese language and have a more in-depth knowledge of Chinese culture. They should also have an adequate knowledge of modern China. For this group of learners, the focus of the Chinese Language curriculum should be on the reading and appreciation of works with great literary value, reading of editorials and commentaries of local newspapers as well as reading of overseas Chinese articles at higher levels, translating between Chinese and English and writing of various styles and genres. The curriculum should also encourage students to write composition (including digital writing) based on their personal interests to build a good foundation in their language abilities. Besides, the curriculum should increase their knowledge in Chinese culture and history and introduce the sociology, politics and economy of China to students of higher levels to cultivate their global awareness.

At the other end of Chinese language proficiency, for students with difficulties in learning Chinese language due to their home language background, the goal of learning should be to communicate using Chinese in everyday life, read Chinese information relevant to everyday life, fill in forms, draft short practical writings and have a basic understanding of Chinese culture. For this group of learners, the Chinese Language curriculum should start by improving their oral proficiency and then move gradually to teaching them skills to read local news and other authentic materials that they may encounter in their everyday life after attaining a relatively fluent level of expressing themselves in Chinese. Subsequently, students could learn how to draft and write simple practical writings based on their reading foundation. Chinese teachers could introduce the basic knowledge and core values of Chinese culture to this group of students using English and help them fit into Chinese communities more comfortably.

For non-Chinese Chinese language learners, the goal of learning could be to allow students to carry out simple conversations using Chinese and develop their interest in Chinese culture. For this group of learners, the Chinese Language curriculum should only require students to be able to converse in daily lives, interact with Chinese language users verbally and express their own thoughts in Chinese. At the same time, the curriculum should let students appreciate Chinese characters through the learning of Chinese calligraphy and develop their interest in Chinese culture by introducing them to the culture and the arts of China through English.

Home language had an important influence on students' attitudes in MLTs and their abilities to master MTLs (Ministry of Education 2011). Thus, for the new round of Chinese Language curriculum reform, parents should participate in the selection of their child's curriculum. They should select a suitable curriculum with considerations from the teacher's proposal on curriculum goals, contents, requirements and assessment and make their choice according to their child's interest and abilities. If parents have a clear understanding that their child can read, understand and cope with a particular Chinese Language curriculum, they would provide the most important support and thereby encourage their child to learn the language well, resulting in their child's change of attitude towards Chinese language and culture.

The main purpose of the proposed 'Subject Streaming' is to provide every child with the most suitable Chinese Language curriculum most equitable to their individual language abilities. The provision of Chinese Language curriculum to a student will work according to his ability in learning Chinese language instead of other less relevant or even irrelevant factors. With more diverse groups of learners, it is an important move to adopt a more flexible way to deal with Chinese Language curriculum. Only through providing a flexible curriculum can we ensure that students with different backgrounds each takes what he needs. We should encourage each student to learn Chinese language to 'as high a level as he is able to' (Ministry of Education 2011: 37). By doing so, we can achieve the ultimate goal of the new MTL curriculum reform, that is, to nurture 'active learners and proficient users' of MTL.

Development Out of the three broad objectives in the teaching and learning of MTL as proposed by the Review Committee, namely, communication, culture and connection, the first (culture) and the third (connection) are related to Chinese culture. Thus, the curriculum framework should necessarily include cultural contents.

Due to the limited curriculum time, it is not possible to subdivide Chinese Language curriculum into subjects like Chinese Literature or History of China. However, it is possible to make use of school-based curriculum hours to systematically introduce students to Chinese culture and history by allocating a fixed proportion of the Chinese Language curriculum time to be used for such purposes. In the local context, instead of a detailed study, school-based curriculum only needs to introduce students to the essence of the Chinese culture and history and elements that are of contemporary significance. The current primary and secondary Chinese language lessons have allocated time for school-based curriculum, which is 20–30 % for primary and 10–15 % for secondary schools. I would propose the new primary school-based curriculum to stay status quo and that of secondary to increase to 20 % of the overall secondary Chinese Language curriculum.

To cater to the needs of learners from different backgrounds, school-based curriculum should be divided into two categories, compulsory modules and elective modules. Compulsory modules introduce Chinese culture through narrative stories or new media to develop students' interests in their own ethnic culture. Elective modules further divide Chinese culture into smaller segments, such as appreciation of Chinese folk music, Chinese technology, Chinese movies, Chinese nursery rhyme

and Chinese customs, etc. These are for deepening the students' understanding of various facets of the Chinese culture. There should not be examinations in such school-based curriculum. Students can be asked to submit assignments for progress evaluation and process monitoring. The assignments could be done through self-directed exploratory and interesting ways, like reports on special topics, interest writings, or webpage creations which the students are capable of creating. With good curriculum planning and proper teacher guidance, school-based curriculum is able to enhance the students' language proficiency and cultural knowledge. At the same time, students can develop their critical thinking and problem-solving skills which are much needed in the present-day knowledge-based economy.

In short, Singapore's Chinese Language curriculum should build on students' language proficiency through centralised curriculum development to ensure that the majority of the students are able to communicate meaningfully using Chinese. For students with exceptionally strong abilities, they should later be able to match scholars from China, Hong Kong and Taiwan. The students' cultural literacy should also be further improved through school-based curriculum. Chinese Language curriculum should not be a content-based curriculum but has a focus on developing language abilities. As long as the students have the ability and interest, they will be able to study a higher-level Chinese Language curriculum commensurate to their abilities and means. With such a curriculum framework, regardless of the specific curriculum the students study, they should be able to reach the highest proficiency level they are capable of. However, flexibility in switching curriculum should be provided, in case of student needs. To qualify for a switch from one curriculum to another, students should take relevant language proficiency test before they are allowed to do so.

Teaching and Instructional Materials

Teaching includes teaching activities and teaching methods. For teaching activities, Chinese teaching needs to be closely related to the life experiences of students. Chinese teaching needs to make use of resources from everyday life to set scenarios to promote the use of language through the scenarios. For teaching methods, Chinese Language teachers need to understand that current students live in an era which information is extensive and the development of information technology is widespread. Chinese teaching needs to keep up with the times by making use of education information technology as an important teaching tool and leveraging on students' familiarity with ICT to promote learning (Chin 2011).

Activities Contemporary language teaching focuses on a learner-centred approach (Tarone and Yule 1999), emphasising the development of students' self-directed learning abilities. Increasingly, scholars from the field of language teaching believe that effective language learning should enable students to practise what they have learned. Language knowledge and skills taught in classrooms have to be consolidated

and reinforced through application of the language in real-life situations (Benson 2001; Nunan 1988; Tarone and Yule 1999).

Chinese language teaching needs to be related to the everyday activities of students and used to create real-life or semi-real-life scenarios. This is to encourage students to use Chinese language for the input, processing and output. By means of this, students will learn how to apply the language in everyday life. For example, teachers can assign students to conduct interviews using Chinese language at train stations to collect public views on train services. Students are to use Chinese language to consolidate the views collected and present their findings in Chinese. Teachers can also let primary school students to use mobiles devices like smartphones or tablets to capture interesting images from places, notices, landmarks or scenes. They can further work on the captured images and share their presentations with peers, teachers or parents using Chinese language. Combining activities with language learning can stimulate curiosity of students, prompting them to take note of things happening in their everyday life and thus cultivating their social responsibility. They are also able to express their views in Chinese language and this helps to develop their creativity and critical thinking. By means of such activities, students will gain the experience of active learning and develop their self-directed learning ability, hence becoming a proficient language user. Using everyday resources to learn Chinese language is relevant to the present Chinese teaching needs of Singapore. It is also one of the main directions of the contemporary international language teaching.

Methods The Report proposes to use ICT to strengthen Chinese teaching. With the current advanced state of technology in Singapore, it is more than possible to completely capitalise the use of ICT in Chinese language teaching. Since the 1990s, Singapore has been promoting the effective use of ICT in teaching with detailed planning and scale. To date, Singapore has three Master Plans for ICT in Education, and ICT has been fully incorporated in all curriculum subjects at every class level. With the implementation of the Intelligent Nation (iN2015) blueprint published in 2007, 90 % of businesses and homes will have access to the Internet network by the end of 2015, and thereafter the learning model that combines classroom learning with everyday practices through the use of ICT will be even easier to implement. Singapore's Chinese language teaching should make full use of the ICT infrastructure provided by the government to develop the use of ICT-mediated teaching and learning. Considering that the students are 'ICT natives', the use of ICT-mediated teaching methods will engage the students' familiarity with ICT and therefore stimulate their interest in learning the language through ICT-related activities. Substantial studies done by scholars and researchers in the field of ICT-mediated language teaching and learning found that the use of ICT has enhanced the language performance of students (including students at the primary, secondary and college levels), facilitated knowledge construction and improved students' attitudes towards the target language (Chin et al. 2015; Liou and Lee 2013; Tay et al. 2013; Wen et al 2011; Wong et al 2010, 2009).

In terms of Chinese language learning, there are many ways the ICT can do to assist and enhance learning. The ICT can help students in characters recognition. Students can learn to input Chinese characters using ICT and achieve a balance between character writing and character typing. Moreover, the ability to use ICT to explore and search for information as well as communicate and exchange information with people in the virtual world has become a prominent ability of students in the twenty-first century (Lan 2013, 2014). Tapping on these abilities in Chinese learning will integrate the learning of Chinese language with the boundless cyber world. ICT-mediated learning can provide Singaporean students with the experience that is closest to their everyday life and hence stimulates their learning interest, resulting in their using of the language naturally.

In terms of teaching, ICT is able to assist Chinese language teachers in many ways. Some of the main aspects are listed as follows:

A. Provide teaching diagnostic:
   1. Diagnose students' oral proficiency and provide suggestions for teaching according to the results.
   2. Analyse students' oral proficiency and assist students to improve on their oral proficiency.
   3. Diagnose students' reading proficiency and provide suggestions for improving reading proficiency.
   4. Detect students' language mistakes in essays and provide suggestions for correction.

B. Promote self-directed learning:
   1. Provide essay writing guidance, assist students to plan essay structure and form sentences and increase their interest in writing.
   2. Adopt pedagogical approaches that are closely related to the students' everyday lives, such as inquiry-based learning, seamless learning and self-directed learning, prompting students to use the language in real-life situations.

C. Create virtual interactive situations:
   Students learn and use Chinese language in virtual reality to strengthen their confidence and ability in communicating with others using the appropriate language under a particular situation.

D. Build a localised web-based oral and written corpus:
   The corpus is able to provide authentic localised corpus as a reference for Chinese Language curriculum planning, instructional materials design, teaching design and language assessment. A good example of this is the Chinese corpus constructed by Singapore Centre for Chinese Language. It is a dynamic corpus which provides authentic corpus for professionals in the area of Chinese as a second language education, including curriculum specialists and teachers. The corpus has been built to assist such professionals in curriculum development, instructional materials design, classroom teaching and language assessment.

Instructional Materials

As mentioned earlier, Singaporean students who are learning Chinese language come from different language backgrounds, and it is very natural for students to have different interests and needs according to differences in their home backgrounds and life experiences. Thus, Chinese language instructional materials could no longer follow the traditional way of one size fits all in terms of standard and content with the simplistic hope that every student is able to learn the language well. Future Chinese language instructional materials should be differentiated materials that are student centred and developed based on students' different backgrounds, needs and interests. The differences in these instructional materials should be reflected in their themes, contents, genres, strategies, assignments and practices, so as to closely fit the uniqueness of students in learning the language. Besides using professionally written passages or articles in the conventional textbook, Chinese language instructional materials should make use of the tremendous amount of real-time materials such as daily newspapers, weekly magazines, advertisements, brochures, entertainment news and product manuals, etc. These materials are closely related to the everyday life of students and are able to stimulate their learning interest. Student-centred instructional materials can maintain students' learning interests in the long run and increase their involvement in classroom activities (Pu and Guo 2005). The advent of the Internet opens up a whole new world of information that adds variety and quantity to the learning materials. The Internet will be an increasingly important source of materials for Chinese language instruction.

Using authentic materials as part of Chinese language instructional materials moves away from the notion of 'using articles to convey ethics' that was the guiding principle of a few sets of Chinese instructional materials in the previous century. Those instructional contents are often not closely related to the life experiences of the students (Chin et al. 2008), whereas the proposed ones will be richer in content, and the learning of Chinese language will become livelier and meaningful. In short, we need to minimise the gap between instructional materials and the information obtained in real-life situations, so as to enable the students to learn with interest and realise the value of learning the materials. As there should be good connection between language learning and everyday life, Chinese language instructional materials should develop the language proficiency of students and raise their cultural awareness. Materials should also progressively increase the students' confidence in using Chinese language beyond the classroom and reinforce their identity of being a Chinese.

Teaching Assessment

Since the beginning of the Twenty-first Century, many scholars advocate that we need to place greater emphasis on the professional competence of assessments of teachers in the process of developing students' potentials. Such assessment is

customised for the learning subject to ensure every student has a chance of receiving quality education (Beare 2001; Yang 2001; Lim 2000).

With the introduction of differentiated lessons in the curriculum, future Chinese language teaching needs to emphasise on formative assessment to enhance teachers' understanding of students' performance. Formative assessment allows teachers to understand the students' learning progress and enable better guidance. Chinese language curriculum should emphasise the strategies of assessment for learning (or formative assessment) and align this with the overall goal of promoting proficient users (Ministry of Education 2011).

Since the 1990s, formative assessment has been playing an important role in assessing the students' learning performance. Formative assessment refers to assessment conducted in the process of teaching activities 'to constantly understand the situation of the activities, and to make timely adjustment to improve their quality' (Wang 2001: 42). Formative assessment conducts cumulative assessment on the learning process and promotes understanding of the situations of students and their grasp of the lesson contents. Such assessment also finds out the reasons why students fail to comprehend certain contents and allows teachers to adopt remedial measures to change their teaching. In addition to reviewing the teaching effectiveness, formative assessment is also able to develop students' ability in self-assessment and peer assessment. This prompts them to adjust their learning strategies and progress and thereby improve their metacognitive ability. Chinese Language teachers will then be able to understand the potential of every student through observing their performance in the learning process and to propose suggestions based on observations. This will also assist parents to choose the Chinese Language curriculum that is most suitable for their children in the next phase of their education.

Through formative assessments, Chinese Language teachers will be able to objectively determine the actual language proficiency of the students and justly provide useful suggestions on the appropriate learning direction. It should become an important teaching assessment mode in the next round of Chinese Language curriculum and pedagogy reform.

Notwithstanding the importance of formative assessment, the role of summative assessment is not to be neglected in the next stage of curriculum reform. Summative assessment helps teachers to assess students' language proficiency level prior to selecting or changing the curriculum that the students would like to study. Such assessment could also provide teachers with useful and objective baseline linguistic information of each group of students so as to prepare suitable school-based curriculum.

The author would like to suggest that summative assessment can be divided into two components, namely, language proficiency test and project work (PW). The language proficiency test serves to test students' competency in reading and writing. PW, which requires students to work with each other and orally present the results of their work, serves to assess mainly the students' oral competency and interactive skills. Different PW can be assigned to students of different subject streams with the requirements cater to the language abilities of students in each stream. The means of the PW can be inquiry based and the theme of the PW should

be selected from students' daily lives. The use of PW as one of the components of summative assessment is closely aligned with the main objective of the Report, i.e. to apply the language in everyday life. The author believes that only by combination of language proficiency test and PW can a student's language ability be objectively and comprehensively assessed.

Conclusion

The aim of Singapore's Chinese Language curriculum and pedagogy reform in the Report is in line with current international trends in language teaching. To fully achieve the aim of 'nurturing active learners and proficient users' as proposed by the curriculum reform committee, Singapore has to develop differentiated Chinese Language curriculum (including school-based curriculum) according to students' language proficiency and learning needs, with the minimum requirements that students are to achieve basic language proficiency. Singapore's Chinese language teaching also needs to develop students' ability in the application of language in everyday life, and this is its main objective. Thus, Chinese language teaching needs to emphasise the practical aspects of the language. Under the guiding notion of learning for using, part of the Chinese language instructional materials will have to be relevant to the students' everyday life. Learning activities will focus on conversation in Chinese language (Mandarin) and problem-solving in real-life scenarios. In view of the fact that the language learners come from diverse backgrounds, the Chinese Language curriculum will need to allow every student to learn according to their own pace and provide timely encouragement and guidance. Thus, formative assessment will become an important tool in language learning.

'Nurturing active learners and proficient users' is a new direction of Singapore's Chinese Language curriculum and pedagogy, and it is proposed due to our diverse language environments and the global trends of language teaching. It proposes a challenging yet optimistic aspiration for the next 6–10 years of Chinese Language curriculum and pedagogy development. Whether this aspiration will be actualised and sustained depends on whether we have done in-depth analysis of the different curricular aspects. If we could adopt the notion of 'differentiated curriculum', we will be able to provide all students with a suitable Chinese Language curriculum and develop them to the best of their abilities. They will also be able to gain knowledge using Chinese language, understand Chinese culture and history and communicate effectively with Chinese communities locally as well as abroad.

As long as every student read a Chinese Language curriculum that is suitable to their own learning ability, the learning process will be an enjoyable one, and they will get to experience the joy of success. Chinese Language curriculum that is rooted in everyday life will also help to increase students' language ability in applying the language and strengthen their confidence in using the language. Singapore's Chinese language teaching needs to let students enjoy their learning. It is only when students participate in active learning that they will love learning, be willing to learn

and apply what they have learned. Active learning is a process, while becoming proficient users is an end result. Once the philosophy of nurturing active learners and proficient users is realised, Chinese language will become a language that students use in everyday life, and the learning of it will no longer be a problem.

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Part II
Potential and Challenges

Chapter 4
Using ICT in Teaching the Chinese Language: Practices and Reflections from Singapore

Cheelay Tan and May Liu

Overview: Information Communication Technology Literacy as a Twenty-First-Century Skill

The twenty-first century is the era of communication and knowledge construction, especially with the rapid advancement of information technology. In this quickly evolving ICT era, society and education face new changes. Students need to develop new skills and dispositions to handle new challenges beyond school. In 1996, a United Nations Educational, Scientific and Cultural Organization (UNESCO) report (Delors et al. 1996) noted that the key characteristic of the twenty-first-century education was learning how to learn. Jacques Delors et al. suggested four pillars of developing a student's learning abilities: learning to know, learning to do, learning to live together and learning to be. In 2007, the partnership for the twenty-first-century skills proposed a learning framework that concretely explains knowledge and skill standards required for the twenty-first-century life. It suggests a complete support system (including standards, assessment, curricula and teaching, professional development for teachers and learning environments) and a learning design that integrates these skills (Partnership For 21st Century Skills 2011). The report proposes that the twenty-first-century learning outcomes should include the following knowledge and skills: (1) core subjects and important twenty-first-century issues, (2) skills for learning and creativity and (3) news, media, technology, life and career skills. Out of the numerous twenty-first-century skills listed in the report, ICT literacy gains importance by the day.

Teaching in the traditional classroom mainly comprises textbook-based lecturing, with teachers presenting and teaching in a linear order. Each country's

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discussions on the twenty-first-century skills and education have different foci but agree that the twenty-first-century learning environments should differ significantly from traditional ones. Information technology promotes these changes and has become both necessary for students to master and also the main channel for students to nurture other twenty-first-century skills. For example, network technology has broken traditional learning boundaries and promoted the creation of a global online learning community. This change requires students to have Internet skills and to be able to use the Internet to develop other skills such as cultural skills, communication and cooperation, problem-solving skills and self-directed learning and development abilities. Hence, with the rapid development of multimedia technology and computer and device usage, ICT literacy becomes a critical necessity as more visual resources and technologies are part of teaching and learning processes. In this process, information technology has also made new demands of teachers who not only have to learn technology skills but also should be able to integrate them into lesson design and the teaching of new skills. Using new technologies, teachers can now choose teaching resources and design lesson plans based on syllabus objectives to pique student interest and overall academic performance.

Developing ICT literacy in the younger generation is a complicated task, but Singapore already has an excellent head start: Singapore's information technology infrastructure is an international leader, infusing the country's economy, society and education. The Singapore government launched 'Intelligent Nation 2015' in 2006, aiming to use pervasive information technology to 'build Singapore into An Intelligent Nation, A Global City, Powered by Infocomm' (Infocomm Development Authority of Singapore 2010). In addition, information technology is also an important element of the framework for twenty-first-century competencies and student outcomes (Ministry of Education ,Singapore 2010) that skill education in Singapore, including the teaching of languages (often by computer-assisted language learning or CALL) which is the focus of this chapter.

CALL has changed since the 1970s with the development of technological and teaching philosophies. Wong (2011: 93–94) identified CALL's stages of development in two ways: his progression adapted from Warschauer and Healey (1998)'s philology theory is divided into three stages (Table 4.1), while his progression adapted from Bax (2000)'s usability angles is divided into three stages (Table 4.2).

Table 4.1 reflects the trends and changes in the past 40 years of language teaching in Singapore – from formal learning based on mastering language rules in the classroom, gradually moving towards informal learning for language use in real-life situations (Wong 2011: 94). The table also shows that the rapid development of Web 2.0 skills from the early twenty-first century is an important technological basis and reason for this trend.

Table 4.1 CALL stages of development: philology theory (Warschauer and Healey 1998)

Stage	1970–1980s/ structuralist stage	1980–1990s/ communicative language stage	Beginning of the twenty-first-century/ integrated stage
Technology	Host computer	Personal computer	Multimedia and the Internet
Language teaching methods	Grammar translation, listening and speaking-based teaching	Communication-based teaching	Content-oriented teaching, teaching with special purposes
Language learning theories	Structuralism (language is in the form of a structural system), behaviourism	Cognitivism (the brain builds new language systems when learning a language)	Social cognitivism (a learner develops language skills through socialisation)
CALL techniques	Mechanical exercises	Communication exercises	Using real-life language materials
Learning goals	Correctness with no errors	Correctness with no errors and fluent communication	Correctness with no errors, fluent communication and real-life usage skills

Table 4.2 CALL stages of development: usability (Bax 2000)

Stage	Restricted CALL	Open CALL	Comprehensive CALL
Task types	Closed-format practice and testing	Stimulating games, computer-mediated communication	Computer-mediated communication
Student activities	Text reconstruction, closed questions, little interaction with students	Computer-based homework, occasional interaction with fellow students	Frequent interaction with fellow students, some computer-based homework related to texts
Feedback	Correcting errors	Concentrating on language skill development, open and flexible	Explaining, commenting, suggesting, encouraging reflection
Teacher roles	Supervisors	Supervisors, facilitators	Promoters, managers
Computer locations	Normal computer labs	Computer labs or language learning labs	Any classroom, any table, in students' backpacks

Current Practice of Using ICT in the Teaching of Chinese in Singapore

Among the school subjects, the application of ICT has been most prevalent in the field of teaching Chinese as a second language. Various aspects in Chinese language teaching reflect ICT's wide applicability, as described below.

Integrating ICT into Chinese Language Curriculum Goals and Assessments

The 2010 Mother Tongue Languages Review Committee (Ministry of Education, Singapore 2010) made key recommendations to enhance the teaching and learning of mother tongue languages (MTL) in schools. One key recommendation is greater use of ICT to enrich students' learning and to have educators treat ICT integration as an education goal and a crucial learning outcome. ICT-assisted assessment introduced in recent years also further aligned educational assessment with changes in teaching and learning. Compared with just a decade ago, students use ICT platforms more widely to create realistic, interactive settings that test their ability to use language effectively and meaningfully (Ministry of Education 2011a). In fact, even before the MTL Review, in 2007, the Ministry of Education Chinese Language (Primary) syllabus already outlined the goals of integrating information technology into Chinese language teaching (Ministry of Education, Singapore 2008). Furthermore, for secondary school students, the Chinese Language (Secondary) syllabus (2011) has concrete teaching goals for information technology to be integrated into Chinese language teaching (Ministry of Education, Singapore 2011b).

The use of ICT is also quickly becoming commonplace in preuniversity Chinese language teaching, not only are teachers encouraged to use it in class but also in assessment. This, again, is based on the MTL Review's recommendations calling for greater alignment of teaching and testing so that students are assessed on the knowledge and skills acquired in their learning. With computer-based writing as the norm in the workplace and in social communication, students should therefore have opportunities to practise and be assessed on computer-based writing.

In fact, to align learning and assessment, computer-based writing was first introduced in paper 1 (functional writing) of the 2013 GCE 'A'-Level MTL B Examination, where pre-university students taking Chinese Language B was required to compose an email response or a blog entry on an examination-controlled laptop; this part of the paper constitutes as much as 20 % of the GCE 'A'-Level B examinations (Ministry of Education and Singapore Examinations and Assessment Board 2013). Not only do written examinations utilise ICT, but oral training and examination will also rely on ICT to create a more engaging and authentic context. Short video clips have been introduced as stimulus in the GCE 'O'- and 'A'- Level B Oral Examinations from 2014 as well.

Integrating ICT into Chinese Language Teaching

The 2010 MTL Review also advocated much more ICT use in the Chinese language classroom. A survey commissioned by the committee found that students today were ICT-savvy and highly motivated in using ICT to learn their mother tongue languages, as 'ICT opens up new possibilities such as the use of interactive content,

assignment of individualised tasks, and the provision of different resources and activities to suit the different needs of students' (Ministry of Education, Singapore 2008: 16).

To support CL teachers, a new resource package that promotes interaction skills and greater use of ICT was produced by the Ministry of Education (MOE), and a web-based MTL oracy portal named iMTL Portal (www.imtl.sg) was developed in 2012 to help teachers improve their oral interactive and written interactive skills, as well as students' communication proficiency. This iMTL Portal, developed for primary four to preuniversity students, is an interactive platform that helps MTL learning through the use of authentic language tasks, such as audio and video presentations, to express their views after seeing the authentic stimuli. Besides reading fluency functions and lesson resources, this portal also has multimodal individualised feedback features such as audio clips, text files and rubrics. This individualised feedback enhances students' ability to communicate effectively through both oral and written forms and also encourages self-directed learning (Ministry of Education 2012c). MOE has also increased the curriculum time for ICT-based interactive language use at all levels. Furthermore, the review recommended that schools introduce computer-based writing alongside traditional teaching of scripts, as typing and voice input are becoming common in Singapore.

In addition, the MOE Educational Technology Division (ETD) rolled out a '10C' ("Very Chinese") platform (www.10c.sg) in 2008 to encourage the adoption of ICT in primary schools' Chinese lessons under the 'Teach Less, Learn More' guidelines. With ETD providing pedagogy, material development, training, consultation and sharing sessions, this platform's main objective is to encourage interactive and integrative use of ICT in the normal Chinese language classroom.

From 2008 to 2015, 80 primary schools adopted this programme in their Chinese language curriculum (http://10c.sg/etd_cep/slot/u10/Intro/school.htm). Through long-term supplementary reading, computer typing, online interaction and peer appraisal, '10C' integrates the learning of character recognition, reading and composition in an ICT environment, so students can improve their CL standards in a cosy learning environment (see introduction on portal: http://10c.sg/etd_cep/slot/u10/Intro/intro_cl.html).

With the recommendations by the Review and with the concerted efforts of MOE and schools, Chinese Language teachers in mainstream schools have been integrating ICT-based programmes and lessons into their classrooms. Since the late 1990s, teachers have been receiving relevant ICT training. One fundamental aspect of their early in-service training is to alleviate the fear and worry teachers have towards ICT-linked lessons. This training reiterates the critical difference between traditional teacher-centred teaching and ICT-linked and student-centred learning in the language classroom. Not only are there significant differences in terms of teaching resources, but the roles of each stakeholder, ICT-oriented and student-centred learning models are also based on a belief in the cognitive dynamism and mutability of knowledge over time. Table 4.3 contrasts ICT-oriented and student-centred learning models with the traditional approach to teaching (Zhang and Zhu 2002).

Table 4.3 Traditional teacher-centred versus ICT- and student-centred teaching

	Traditional teacher-centred teaching models	ICT- and student-centred teaching models
Teaching goals	The syllabus is based on individual parts and emphasises basic skills	The syllabus moves from the whole to its parts, emphasising major concepts
Teaching content	Sticks strictly to preset teaching resources	Tracks students' questions and interests
Teaching resources	Textbooks and manuals are the main sources	Original messages and customisable materials
Messages to be taught	Well prepared for students, excellent packaging	For learners to discover, analyse and organise on their own
Teaching process	Learning is an iterative process	Learning is interactive and built on students' existing cognitive structures
Teaching method	Teachers communicate messages to students, who are the recipients of knowledge	Teachers are in a dialogue with students and help students construct knowledge
Teacher roles	Directors, experts, authorities	Questioners, guides, helpers, facilitators, consultants, negotiators
Student roles	Students mainly learn independently	Students learn with a small group
Assessment by teachers	Students are assessed through examinations and correct answers, and results are emphasised. Assessment is based on quantitative analysis	Examinations, student work, experiment results and viewpoints. The process is considered as much as results. Assessment uses a blend of quantitative and qualitative analysis.
State of knowledge	Knowledge is static	Knowledge is dynamic, changing with our experience

Source: Zhang and Zhu (2002)

With the ICT and student-centred teaching models widely recognised by the Chinese language teachers, the integration of ICT into the Chinese Language curriculum tied with the twenty-first-century skills, will make technology meaningful to learning. Chin (2011) suggested a tiered structure for information technology skills' development in the Chinese language syllabus according to the different domains of information, including knowledge, exchange, decision-making, analysis, creativity and social awareness. These domains are the core of the Twenty-first Century skills advocated by MOE to develop students into global citizens with comprehensive knowledge and the ability to communicate, exchange ideas, make decisions, solve problems and create.

Table 4.4 shows three important skill sets of Chinese language teaching: spoken, written and combined abilities and their relationship with ICT development (Chin 2011: 8). The table gives an overview of how information technology is used in language teaching. For example, when developing written language skills, students can use Chinese language learning courseware and software and online translation tools to carry out online searches (knowledge). Students can also express and exchange written opinions about particular topics on online platforms (interaction).

Table 4.4 Integrating ICT skills with CL skill sets in the Chinese language classroom

CL skill sets	Knowledge: basic literacy	Interaction: interpersonal interaction	Decision-making: problem-solving	Analysis: individualised learning	Innovation: developing creativity
1. Oral skills training	1. Learning about the spoken language platform interface and its functions 2. Using a computer's voice recording tools 3. Simple sound editing 4. Using electronic reading assessment tools	1. Understanding and checking digital information (verbally) 2. Short and simple message conversations (sentence analysis and assessment) 3. Expressing viewpoints on set topics on an online platform and commenting on others' viewpoints (spoken) 4. Situational dialogue practice and learning	N/A	1. Voice recording and tone correction Oral sentence formation relay	1. Round robin (oral skills)
2. Written skills training	1. Learning and practising how to use an online interface 2. Using Chinese language learning resources/software 3. Using Chinese text input tools (including handwriting input) 4. Searching for an online dictionary 5. Looking words up on an online dictionary 6. Online bilingual translation	1. Understanding and checking digital messages (written language) 2. Process writing (sentence construction) 3. Round robin storytelling (written language) 4. Process writing (full text) 5. Expressing viewpoints on set topics on an online platform and commenting on others' viewpoints (written language)	1. Class website design 2. Electronic editing (multimedia homework)	1. Digital stroke order correction (online or offline) 2. Digital homework (online or offline) 3. Building an electronic portfolio	1. Writing electronic writing for children (online or offline) Digital literature

(continued)

Table 4.4 (continued)

CL skill sets	Knowledge: basic literacy	Interaction: interpersonal interaction	Decision-making: problem-solving	Analysis: individualised learning	Innovation: developing creativity
3. Combined language skill practice	1. Introducing an interactive online platform Multimedia software editing skills	1. Multimedia message transfer and exchange 2. Online chat and video conferencing	1. Small-group project work in school (wiki platform) Building an electronic database and reporting on it (school survey) Resource-based learning	1. Individualised multimedia learning reports (spoken and written language combined) Personal blogs	1. Themed websites (literature, art, science, history, folk customs, religion, culture, etc.) Online publishing

Source: Chin (2011: 8)

They can also build a class website (decision-making) and a personalised electronic learning portfolio (analysis) or read or create online literature (innovation).

To effectively integrate ICT into Chinese Language teaching, the above needs to be systematically carried out, and the functions and objectives of the activity design become all the more important. Even with ICT, face-to-face explanations and clearing doubts are still important and hence *blended learning* or integration of ICT and face-to-face pedagogy would be desirable. Blended learning allows a teacher to better judge the ability and difficulty faced by a student and to adjust the ICT to provide a scaffold for different levels and encourage learning.

Web 2.0 Technologies and Chinese Language Teaching

As information technology has become the primary daily media source to students and teachers in the twenty-first century, multimedia resources, in particular Web 2.0 sources, have become an indispensable learning resource in school and in families. According to Huang and Yin (2011), in this technological age, 'multi' refers to multiple media performances, multiple sensory organ use, multiple device integration, multidisciplinary intersections and multi-field applications, and 'media' refers to an intermediary between the person and the objective world and the combination of different media into one. Meanwhile, Web 2.0 refers to a second generation of the World Wide Web that is focused on the ability for people to collaborate and share information online.

Currently, the most commonly used multimedia ICT platforms are all found under Web 2.0. Out of the many Web 2.0 platforms and tools, eight of the most popular ones include blogs, Facebook, Flickr, wikis, podcast, Twitter, Voicethread and WeChat. These Web 2.0 platforms contrast greatly with their predecessor Web 1.0, a fixed, monodirectional display and storage platform. Web 1.0 mainly uses Dreamweaver, Flash, RapidWeaver, FrontPage, iWeb, HyperStudio and other software to create websites that were both difficult to use and time-consuming to update.

Some of the more prominent examples of using Web 2.0 in Chinese Language teaching include teachers using blogging platforms (for instance, www.iWrite.sg developed by Singapore Centre for Chinese Language to assist creative writing teaching) and wikis to disseminate supplementary reading materials and composition model essays and receive feedback and comments from students; Facebook, Twitter and WeChat are mostly used as social media platforms to encourage student interactions using Chinese in an authentic virtual setting; podcast and Voicethread are exceptionally useful for developing listening and speaking skills and are used by many schools in oral exam training.

To further tap on Web 2.0 capabilities, mobile devices such as smartphones and tablet computers common among teachers in Singapore allow 24/7 access and seamless learning anytime and anywhere, such as using WhatsApp to interact in the Chinese language among student discussion groups. In virtual worlds, Web 2.0 technology has now made students' online experiences more personalised with

more interactivity in networks and with other learners. Web 2.0 technology is becoming more experience based, with content changing and being enriched to reflect our real lives, which is all desirable for CSL/CL2 learners whose language abilities are even more varied than CNL/CL1 or CFL learners.

At the same time, Web 2.0 allows the learner's role to evolve from being mere content consumers to content producers and participants (Godwin-Jones 2007), which means constructive Chinese language learning materials can easily be shared among learners. Web 1.0 only gave teachers and students' communication and reference abilities in the language learning classroom, and Web 2.0 is now giving them a full learning environment.

After the Web 2.0 era began in the early twenty-first century, it became user-centric, giving users a high level of autonomy while providing them with web platforms for interaction and exchanging opinions. Outside of work and school, blogging, social media and online chatting are a daily task for the general public now, and of course, including teachers and students. According to *Lianhe Zaobao* (Ong and Ding 2010: 10), Ho Peng, the 2010 Mother Tongue Languages Review Committee chair and former director general of education at the Ministry of Education, said at the Global Chinese Conference on Computers in Education that current students in Singapore grew up as digital natives surrounded by text messages, blogs and online interaction platforms, so the way they learn differs vastly from students of the past. To support students in being more actively immersed in learning, teaching must integrate new technologies more effectively (Ong and Ding 2010).

For teachers to fully understand the concept of Web 2.0 to unleash their benefits in the classroom, it is important to highlight the characteristics of Web 2.0 platforms (adapted from Tan 2011: 112–113):

- Suitable for many types of learning models, such as individualised planned interventions (IPI).
- Users own and control information: unthreatened by technology, highly interactive, present resources can be used and repeated use is possible.
- Information technology can create suitable learning environments outside the classroom when paired with multimedia applications.
- High student appeal platforms attract students towards low student appeal subjects.
- Independent learning: from learners' perspectives, independent learning can be according to personal progress at any time and any place, as learners please.
- Users can add value to Web 2.0 platforms.
- Mainly put together in a random or modular way, putting an interface and functions together to contain multimedia messages.
- Social and interactive functions.
- Real-time updates, what you see is what you get (WYSIWYG).

Use of ICT in the Teaching of Chinese in Singapore

The goal of integrating ICT into the teaching of the Chinese Language is not only to use its interactivity, participatory nature, multimedia and other advantages to enhance students' interest in learning but also to improve students' language abilities. ICT, especially Web 2.0 platforms, can be integrated into the teaching of the Chinese by providing a multidirectional form of communication, as well as to let students interact, exchange ideas and learn independently and collaboratively online.

The key to Web 2.0's success in language teaching is not in choosing the most popular tool among students for classroom use but appropriate teaching design. These lesson plans must be rooted in L. Vygotsky's theory of social constructivism so that 'language learners learn to express their own thoughts or feelings in the language they are learning through a social constructivist process' (Wong 2011: 97).

Wong notes, furthermore, that there are three main roles for Web 2.0 lesson design for the teaching of the Chinese. Firstly, there are teacher-centric roles in which Web 2.0 tools are used to create and distribute learning materials, allowing limited teacher-student and/or student-to-student interaction. Secondly, there are student-centric roles in which students independently use Web 2.0 tools to create and share work, comment on others' work and to collaboratively build media content, while teachers simply play supervisory and facilitation roles on the side. Thirdly, both the above-mentioned roles can be combined, with teachers providing learning materials and discussion topics and actively encouraging students to independently create content or to suggest topics of discussion (Wong 2011: 98).

From a teacher's perspective, some benefits of using ICT to support Chinese Language teaching in today's Chinese as a second language context are:

- Encouraging students to listen, speak, read, write and learn outside the curriculum in great amounts.
- Data entered can be from real-life language sources in the world and exported material can be addressed to the world, easily forming meaningful input and output.
- Students can obtain timely feedback which can encourage them.
- Social media sites or collaboration sites encourage cooperative learning, such as class blogs.
- The platform creates learning progress reports that record student progress or edit counts.
- Different pages on the platform allow for individualised teaching. For example, a wiki teaching tool can have core pages, introductory pages and advanced pages for students to use the pages that match their own levels.
- ICT, especially Web 2.0 platforms, can be easily customised with a search function and links and supplementary information, such as links to online dictionaries or graphic functions.

- Collaborative websites allow students to self-assess and comment on classmates' work to get multiple levels of feedback.

Although ICT-oriented language teaching has many benefits, there are certain common issues to take note of for Chinese Language teachers in Singapore schools because most are still in the early stages of using online platforms to carry out interactive teaching. The reasons for this situation may be:

- Not enough computers in school computer labs or computers that often break down, inconveniencing students.
- Not all students have computers at home, which make it hard for some to carry out self-directed learning.
- Some students with learning disabilities need face-to-face guidance with teachers.
- Some students lack the self-discipline to learn online according to a timetable, delaying their learning progress.
- If students do not have Web 2.0 platform accounts, some administrative and technical issues will need to be solved before use (e.g. helping students register for accounts and inviting individual students to join teachers' websites), taking time and effort.
- When using Pinyin input, students may select similar-sounding incorrect words and should pay attention to fixing such typos.
- Students' privacy is a pressing issue, as cyber safety and consciousness is not well taught.

It is imperative for Chinese Language teachers to recognise and understand these problems in the Singapore classrooms, as only then can teachers use many different teaching strategies (including interactive teaching, collaborative learning and differentiated teaching,) to counter these challenges according to their teaching goals and need to help students learn independently online and transcend the limitations of space and time. When the ICT tools are sharpened, teachers do not just interact with students in the classroom but can also stimulate students to learn the Chinese outside the classroom with web resources.

Scholars including Wei and Yuan (2010), Xiao (2009), Yao and Liu (2010) and Zhong (2012) propose important points about supporting the language classroom with ICT. They discuss three areas of classroom management strategies and information technology support: (1) class goals and rules, (2) teaching design and (3) teacher development. Clear class goals and rules promote a structure for a good learning environment. Excellent teaching design helps students focus and learn effectively with reduced distractions. And good teacher development helps teachers continuously improve classroom management and related skills to ensure the effects of learning.

Class Goals and Rules

ICT-oriented classrooms are known to be even more manageable than the traditional classroom setting as the attention of students will be focused on the ICT and much less on the teacher or other teaching activities. Hence, to ensure teaching objectives are met, setting the class goals and rules are most imperative from the onset:

- Set class goals and individual student learning goals with students so that personal goals and class goals are streamlined in the same direction with ICT as the supplement.
- Have students participate in the creation of class rules, and have teachers support them using the Web 2.0 (such as a class wiki page, like an electronic class diary).
- Enforce class rules with students with using humanistic and positive guidance, and use ICT to help monitor and keep track of progress.
- Pre-lesson education to ensure that students clearly understand classroom management requirements and ICT skills.
- Create a positive outer and inner mood, carry out adjustments in stages for timely feedback and the continuing improvement of the ICT-oriented learning environment.

Classroom Activity Design

With growing popularity, the ICT-oriented activities are now being used in multifaceted methods: they can be in the form of tasks, and content can be embedded within the tasks to encourage students to focus on analysis, discussion, inquiry, conclusion and building an understanding and recognition in the process. They usually take place in small-group collaborations with heterogeneous groupings, where conditions are created for students to learn from each other, and online. Importantly, Chinese Language teachers need to be very clear of the following factors when engaging the students in ICT-assisted classroom activities:

- Whether the activity can inspire students to think and explore
- Whether the activity can encourage students to exchange ideas, communicate and solve problems together, by using ICT or face-to-face
- Whether the learning activity fits students' characteristics and abilities
- Whether the learning activity has a reasonable amount of material
- Whether the activity stimulates student interest and whether there is a sense of accomplishment on completion
- Whether the activity encourages students to learn subjectively

- How the multistage teaching sets up different tasks designed for students to choose from
- Whether there is adequate preparation of teaching resources, students, technology and teachers to optimise class time
- Whether there is succinct classroom talk that inspires student reflection and guides students towards discussion at appropriate times
- Whether the core learning material and tasks are placed in the golden periods (the first 5–20 min of class)
- Whether the choice and application of ICT can improve classroom management
- Whether there are varying ICT-oriented and face-to-face activities for students to keep focused
- Whether there is constant encouragement for students for sharing their findings online and in real life to keep them engaged

ICT-Assisted Activity Design beyond the Classroom

Mobile computers and hand-held devices are the future trend of technology-supported teaching, as they can extend teaching and learning beyond the classroom into a mobile learning environment. Students can use computers more freely, making out-of-class and outdoor learning, resource sharing and other benefits possible. Studies show that information technology encourages improvements in students' classroom performance but brings new challenges such as students using unrelated websites (Tan et al. 2014). When using mobile computers and hand-held devices, teachers have to pay attention to the three critical aspects of having clear and observable classroom goals, splitting small groups into individual duties and roles and nurturing students' independent study abilities.

Tablet PCs, and especially the iPad which was introduced in 2010, perform excellently, have a clean design, are portable and have quickly become a teaching supplement for many schools and students. Tablet computers will be the new trend in technological support of teaching in the future, and multisided experiments with them should be conducted in classrooms. New Zealand scholars Melhuish and Falloon (2010) noted the benefits and implications for innovative practices of integrating iPads into teaching. From 2010 to 2013, teachers in the UK, USA, New Zealand, Australia and other countries also held iPad classroom trials.

However, in Singapore, research and experiments in using the iPad in Chinese Language teaching are still in its early stages. Some of these early researches include the collaborative research projects to use iPads in teaching creative writing by Singapore Centre for Chinese Language, Nanyang Girls' High School and Bukit Panjang Secondary School. The specially designed iPad-supported creative writing lesson plans generated positive results in developing students' imagination and creativity and increasing their interest in creative writing (Tan et al. 2014; Puah et al. 2014). In addition, together with Nan Chiau Primary School and the National

Institute of Education, Singapore Centre for Chinese Language (Wong and Chin 2010: 69–84) organised Chinese language mobile learning research for learning Chinese idioms with smartphones. Their research clarified how computer-assisted language learning (CALL) conforms to how language learning theory moved from behaviourism to changes in communicative, situational and structural learning, integrating with mobile-assisted language learning (MALL) to form the 'second wave' of learning technology, changing teacher-centred classrooms into student-centred classrooms.

These early research have together showed that, compared to traditional teaching methods, mobile technology-supported teaching was better at enabling students to be more proactive and involved in discussions, as well as continuing their learning beyond the classroom setting. Teachers are not just teaching to students but acting as guides, participants, respondents and classroom observers. Their multiple roles give students more chances to express their creativity and resourcefulness independently. The positive and productive initial conclusions from these studies showed that mobile technology has great potential for Chinese Language teaching and learning and are definitely worth for future research and adoption by more Chinese Language teachers in Singapore.

Teachers' Professional Development

ICT-assisted pedagogy is more information- and student-centred than traditional teacher-led lessons. Although dependent on the development of self-regulated learning in students, these pedagogies actually demand that the teacher has superior guiding and facilitating skills that have to be attained via professional development. Based on the five aspects of self-regulated learning (which include strategic knowledge, self-efficacy, ownership, mastery orientation and self-reflection), Zhong and Xie (2004) suggest corresponding applicable ICT technologies that can be integrated into language learning (Table 4.5) and which can also form part of future in-service upgrading training (see Table 4.5).

Table 4.5 Aspects of self-regulated learning and possible corresponding ICT training

Aspects of self-regulated learning	Possible corresponding training of ICT technologies
Strategic knowledge	Expert systems, intelligent tutor systems, search engines, virtual reality simulators, multimedia teaching software, virtual classrooms, miniature worlds, bulletin board systems (BBS), newsgroups, chatrooms, video conferencing systems, message boards, problem-based and project-based learning (PBL)
Self-efficacy	Self-paced multimedia learning software, virtual learning companions
Ownership	Collaboratory, WebQuest, cognitive apprenticeship
Mastery orientation	Guiding CAI, teaching/experiment simulation software, subject databases, teaching test kits
Self-reflection	Electronic portfolios, concept maps, self-testing tools, case-based learning

In fact, some of the above-mentioned ICT technologies, such as BBS, newsgroups, PBL and electronic portfolios, are used to be employed by teachers trained in the Academy of Singapore Teachers and Singapore Centre for Chinese Language. However, most higher level ICT systems such as virtual learning companions and teaching or experiment simulation software are in fact quite foreign to our Chinese language teachers, because their previous training mostly concentrates on ICT literacy and know-how, instead of the rationale and philosophical aspects of ICT-integrated language learning. Such higher level training will be useful to expand the teachers' understanding and application of ICT in Chinese language teaching and can bring self-regulated language learning to a higher level.

In addition to the possible ICT training programmes, other more general professional development strategies which Chinese language teachers may undertake include:

- Being familiarised with experienced and effective classroom activity plans such as collaborative teaching methods in an ICT-oriented situation
- Continuously reflecting on classroom management problems, especially when using technology
- Experimenting and challenging oneself with more effective ICT-oriented tools and methods continuously
- Joining professional learning communities to learn from other teachers' classroom management experiences

Authentic Learning with ICT: A Possible Future for Chinese Language Teaching

Based on the discussion above and the educational trends today, the future of ICT-assisted Chinese Language teaching in Singapore looks bright and promising. Besides the numerous ICT activities that can contribute to the various aspects of knowledge construction, Singapore is also progressively moving towards technology-assisted, immersive and authentic learning in Chinese language teaching. An emerging trend of teaching and learning the Chinese language that has become more evident in Singapore in recent years is *authentic learning with ICT* (ALICT). This refers to using authentic materials and context for immersive learning in an ICT-assisted environment.

With the advancement of technology, the 'ICT' portion of ALICT will become more intuitive, humanistic and simple. It is the 'AL' or authentic learning part which requires the teachers' deep considerations and innovative design. We adopted the principles of problem design and process design for the immersive learning model from Hung et al. (2006), as well as reference from North Central Regional Educational Laboratory (2004), and believe these principles can help teachers understand the important design requirements for authentic learning as illustrated in Table 4.6.

Table 4.6 Authentic Learning Framework

A. Framing the *Authenticity*: questions, activities, subject knowledge		
1.	Questions	Come from real-life situations Contain learning points related to the syllabus Can be designed by teachers in collaboration with students Are multidisciplinary and direct students to solve problems
2	Activities	Students and teachers design plans to complete learning goals Have questions that contain multiple stages, scaffolding and encourage students to solve problems
3	Subject knowledge	Students are familiar with the subject knowledge needed to solve a problem; Students understand related concepts from different subject areas in the process of solving a problem
B. Designing the *Learning*: ownership, collaboration, monitoring, experts, tools, scaffolding		
1	Ownership	Students determine personal learning goals with the support of teachers and experts Students participate in different areas of the inquiry process, such as exploration, experimentation and reflection Students refine questions and participate in the problem-solving process
2	Collaboration	Students collaborate in small groups to solve problems together Students assign duties and refine duties according to the topic to achieve their goals Students complete the task through mutual reliance
3	Monitoring	The process is monitored, not the result More than one assessment tool is used Learners can self-monitor and assess their learning during the process, determining the range of assistance needed for their next activity
4	Experts	Experts and teachers provide: A guiding framework for exploration and problem-solving that simulates professional supporting tools and techniques Support for the inquiry process, metacognition, collaboration, communication and other aspects to narrow the distance between expert knowledge and skills and students Opportunities for students to play various roles in the problem-solving process
5	Tools	Students, teachers and experts use open access communication tools to complete the problem-solving process These tools mimic experts' tools in terms of the collaborative and dialogue-based nature of their problem-solving environment
6	Scaffolding	Scaffolding in stages gradually increases the level of complexity and variation in questions posed to students

In conclusion, with increased interest in ICT, we hope Chinese Language students will recognise and attempt to link the two rising trends of accessing authentic materials and using easily available ICT as early as possible. One of the fine approaches to associate these trends with the learning of the Chinese could be the appropriate framing of the authenticity problem and the designing of the learning strategies with the aid of ICT, so students and teachers can reap the benefits of ALICT in the long run.

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Chapter 5
Chinese Language Teachers' Perceptions of Training Needs and Perceived Student Difficulties

Kaycheng Soh

Introduction

In the past decade or so, there have been many efforts to specify expected language proficiency or competence in great details for different language skills and levels of attainments. This resulted in the proliferation of documents referred to as *standards, frameworks, benchmarks*, *expectations*, etc. Typically, they take the form of a graded series of skill-level matrix in which language competence is specified as *descriptors*. In a sense, this is similar to assessment rubrics but covers a much wider range over many grade levels which have become popular over the world in the context of *formative assessment*.

International Scene To date, the best known and most influential language standards is the *Common European Framework of Reference for Languages: Learning, Teaching, Assessment* (CEFR; Council of Europe 2011). It serves as a guide to describe achievement of languages across European countries and is assumed to be applicable to all European languages in spite of their differences. The CEFR has even been adapted by countries beyond.

The levels of language competence in the CEFR are Breakthrough (Beginner), Waystage (Elementary), Threshold (Intermediate), Vantage (Upper Intermediate), Effective Operational Proficiency (Advance), and Master (Proficiency), and the CEFR operationalizes the language competence in behavioral terms that facilitates teaching and objective assessment. For instance, cited below is for the lowest level (Beginner; Basic User, A1; p. 24):

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- Can understand and use familiar everyday expressions and very basic phrases aimed at the satisfaction of needs of a concrete type
- Can introduce him/herself and others and can ask and answer questions about personal details such as where he/she lives, people he/she knows, and things he/she has
- Can interact in a simple way provided the other person talks slowly and clearly and is prepared to help

In contrast, for the highest level (Master; Proficient User, C2; p. 24), thus:

- Can understand with ease virtually everything heard or read
- Can summarize information from different spoken and written sources, reconstructing arguments and accounts in a coherent presentation
- Can express him/herself spontaneously, very fluently, and precisely, differentiating finer shades of meaning even in the most complex situation

A close look at the two sets of descriptors above reveals that the CEFR stresses communication and interaction as the ultimate goal of language learning.

On a smaller scale, at the national level in the USA, there is the *Foreign Language Standards and Proficiency Expectations* of the Department of Defense Education Activity (No date). This is an adaptation of the earlier *Inverted Pyramid of Proficiency* of the American Council on the Teaching of Foreign Languages. Note that this framework is for foreign languages and competence is described as of three levels (which have subdivisions): novice (low, mid, high), intermediate (low, mid, high), and advanced (low, advanced). Cited below is a description of the expected proficiency for Elementary K-2 students (Novice Proficiency Range, Novice-Low Level, p. v):

> By the end of 2nd grade, students comprehend and produce vocabulary related to everyday objects and actions on a limited number of familiar topics. Students imitate modeled words and phrases using intonation and pronunciation similar to the model. They demonstrate limited comprehension of vocabulary when enhanced by auditory and visual stimuli, pantomime, props, realia (culturally authentic learning tools), and videos. Students imitate the use of culturally appropriate vocabulary. They predict a story line or event when it involves literature, folktales, fables, and stories culturally similar to their own.

A descriptor like this specifies not only the language aspects but also how language is to be acquired (i.e., modeling) and there is also an element of cultural learning (e.g., *culturally* similar literature, folklores, fables). Obviously, a descriptor like this is more fitting for *language education* (which is a much broader concept of teaching a language *and* its culture) than for *learning instruction* (which focuses almost exclusively on the acquisition of language skills).

Besides such specifications at the international and national levels, some states in the USA have their own versions, too. A typical example is the *Michigan World Language Standards and Benchmarks* (Michigan Department of Education No date). And, again, communication is given emphasis as the *Standards and Benchmarks* defines what students should know and be able to do to communicate effectively in a language other than English.

In the Michigan framework (Michigan Department of Education No date, p. 3), language competence is described with reference to three elements:

- The *communicative functions* that students should be able to carry out
- The *contexts* in which students can understand and use written, spoken, and/or signed language to carry out these tasks
- The level of *accuracy and appropriateness* of the language student uses

This three-part functions-contexts-accuracy model is used to describe language proficiency at a variety of levels.

For the Chinese language, the Office of Chinese Language Council International (Hanban/Confucius Institute Headquarters 2007) has published the *International Standards for Chinese Language Teachers*. Hanban/Confucius Institute Headquarters is a public institution affiliated with the Chinese Ministry of Education of PRC. Similar to the British Council for English language and culture, Hanban provides resources and services worldwide for the teaching of the Chinese language and culture. The Chinese *Standards* describes the knowledge, competency, and quality that an international Chinese Language teacher should have and serves as a basis for training, appraising, and certification. With these as its purposes, the *Standards* has its target the teacher and not the students of primary and secondary schools.

Nevertheless, it is informative that the Chinese *Standards* takes a comprehensive stance to include not only language competence but also related teaching competencies. The five modules are: (1) linguistic knowledge and skills (for Chinese and foreign language), (2) cultures and communications (Chinese cultures, foreign cultures, and cross-cultural communications), (3) theory of the second language acquirement and study strategy, (4) teaching methodology (teaching, evaluation, curriculum, modern education techniques), and (5) overall quality (professional quality, development ability, and professional ethics). It is interesting that the Chinese *Standards* refers to research findings such as those of TESOL.

While the standards movement is well on its way, a pertinent question to ask is: In what ways will standards help in the education process? In a discussion on the standards-based curriculum (not only of language but in general), Judy Steiner (No date: 8), Chief Inspector for English Language Education in the UK, had the following to say:

> Setting standards is an important and effective learning tool because they express clear expectations of what all pupils should know and be able to do with the language. They can be helpful to different populations, such as the state, districts and schools, teachers, pupils and parents.

However, Steiner also pointed up the concerns, also raised by some American educators, that setting standards would lead to centralized education and would undermine innovation at the local level. She further pointed out an additional caveat: the standards should reflect a high level of achievement, while being realistic and relevant to the context in which they are being taught. Her discussion ends; thus:

> Standards in and of themselves are meaningless. What counts are the steps that educators and others take to help pupils reach them. (para. 35)

Thus, it appears that the publication of standards as such is only the beginning of a long winding road of education reform where language instruction is concerned.

Singapore Context The teaching of Chinese Language in Singapore has over the years become a keen concern of the educational authorities, the Chinese community, and the Chinese Language teachers' organizations. Prior to the implementation of the New Education System in 1979, there were vernacular schools in which ethnic languages were the main media of instruction according to the ethnicity of the students and English was studied as one of the subjects. There were also English Schools where all instruction was conducted only in English and ethnic languages were studied as a subject, if at all. With the implementation of the New Education System in all schools, all instruction is conducted in English, and students learn their respective ethnic languages (referred to administratively as the Second Languages and now Mother Tongue Languages) as stand-alone subjects. This change could well be the main cause of learning difficulty where ethnic languages are concerned.

There is no denial that the Chinese language is a much more difficult language to learn. The Foreign Service Institute of the USA defines for English speakers the time needed to attain the General Professional Proficiency in speaking and reading at Level 3 (Effective Language Learning No date). In this scheme, Chinese language (together with Arabic, Japanese, and Korean) are the most demanding in terms of time. To reach Level 3, these languages need 2200 h of learning and are labeled as "Category V: Language which are exceptionally difficult for native English speakers", whereas many European languages such as Dutch, French, Italian, Spanish, and the three Scandinavian languages are labeled as "Category I: Languages closely related to English" which need only 575–600 h of learning. Thus, even for adults, learning the Chinese language requires about four times of that needed to reach the same level of competency of European languages related to English. And if this is for motivated adult learners of the Chinese language, what more for unmotivated children who have to learn it?

In Singapore schools, Chinese Language as a standing-alone subject takes up about 15–18 % of the total curriculum time, and this is comparable with most other subjects in the curriculum. Although the Chinese Language syllabuses have been adjusted to the so-called Second Language level, whereas the other subjects are taught in English and this provides additional practice of it, the Chinese Language has no such advantages. Thus, the limited exposure and lack of practice could have given rise to the problems of learning the language.

Over and above the difficulty inherent in the language, especially in its written form, the problem of teaching Chinese has gradually, perhaps unperceptively, been aggravated by the changes in home language of the students. As shown in Table 5.1, a survey by the Ministry of Education (2004) shows that the proportions of parent–child interaction using Chinese decreased from 59 % at Secondary 4 to only 37 % at Primary 2, with a difference of 22 % over an 8-year period. On the other hand, parent–child interaction using English only increased from 18 % at Secondary 4 to 26 % at Primary 2, with a difference of 8 %. During the same period of time, families

Table 5.1 Changes in home language among students

	Primary 2	Primary 3	Primary 6	Secondary 2	Secondary 4
English only	25.7	23.5	21.5	24.4	17.6
English and Chinese	33.0	27.4	29.6	21.8	19.6
Chinese only	37.3	44.8	44.1	50.2	59.1

Source: Ministry of Education, Singapore 2004, p. 52, Table 1

became more bilingual, using both English and Chinese for cross-generational interaction; the proportions changed from 20 % at Secondary 4 to 33 % at Primary 2. Such changes can be expected to have an influence on the learning of the Chinese language as home support is critical for language acquisition and language learning. This increased discontinuity from home to school where the language is concerned would have led to not only greater difficulty but also weaker motivation in learning.

However, the difficulty in the teaching and learning of Chinese Language is not totally unforeseen as there have been five reviews in 1978 (Note: This is a holistic review of the system as a whole and not only on the teaching and learning of Chinese language), 1992, 1999, 2004, and, the most recent, 2010. These periodical reviews involved political leaders, university professors, school principals, first-line teachers, students' parents, community representatives, and ministry officials. Information and views were gathered through large-scale surveys and focus group discussion sessions. Every review led to redesigning and diversification of the Chinese Language curriculum and examination formats, development of instructional materials, and suggestions for effective teaching.

The most recent review resulted in the report *Nurturing Active Learners and Proficient Users* (Ministry of Education, Singapore 2010). The Review Committee recognized the diversity in language background and ability of the students as well as the importance of communicative competency. Explicitly the Committee stressed a key recommendation:

> (…) teaching methods will have to take into account the different home language backgrounds and language learning abilities of students, especially in the early foundation years. The MTL curriculum should be designed and taught to develop proficient users who can communicate effectively using the language in real-life contexts and apply it in interpersonal communication, listening and reading for comprehension, and presenting in spoken and written forms. (p. 14)

The Committee further recognized the need for explicit specifications of the levels and types of language competency in Mother Tongue Languages and recommended that proficiency descriptors be developed to guide teaching, learning, and assessment; thus;

> The proficiency descriptors will help teachers tailor their teaching, classroom activities and assessments to create more opportunities for students to practise and use their MTL in specific ways, e.g. show-and-tell, role-play and group discussion. With clearer goals, students will also be more motivated to progress from one proficiency level to the next. (p. 16)

While the development of the proficiency descriptors as recommended by the review committee is being awaited, there is a value to surveying Chinese Language teachers with regard to their perceptions of students' learning difficulties, and, in connection with these, the teachers' perceived training needs.

Objectives and Significance

Against the backdrop above, the present study is an effort to gather empirical data for the following objectives:

1. To identify the training needs of Chinese Language teachers with regard to the various types and levels of the language skills
2. To ascertain Chinese Language teachers' views on the attainability of the various types and levels of the language skills
3. To ascertain the relations between Chinese Language teachers' felt training needs and their perceived student difficulties in attaining the language skills

It is a truism that the best method to ascertain the attainability of the stipulated language skills is to gather performance data from the students. This, however, has to be a long-term aspiration for the simple reason that learning takes time and is therefore not possible at this early stage. As an interim measure, relevant data is to be gathered from the Chinese Language teachers. This is justifiable for the fact that teachers are in constant interaction with students and therefore have trustworthy perception of attainability. Moreover, based on their past experience, teachers are able to foresee their relevant training needs.

The data gathered for the present study will serve two important purposes. Firstly, it identifies aspects of Chinese language learning where research is needed. Secondly, the data provides information of the specific training needs felt by the teachers for whom courses and workshops can be conceptualized and conducted to better prepare them to meet the students learning needs.

Method

Respondents

A convenience sample of 414 Chinese Language teachers (Primary 221 and Secondary 193) who attended training courses at Singapore Centre for Chinese Language during June to July 2014 participated in the survey. It was estimated that there were about 3000 Chinese Language teachers in Singapore at the time of this study. For a population of this size, a sample of 341 is needed to attain 95 % confidence level and 5 % confidence interval (The Survey System 2012). Moreover,

according to the Researcher Advisor (2006), a sample size of 384 is good enough to represent a population of as large as 250,000, with 95 % confidence level and 5 % confidence interval. Thus, the number of teachers of the present study is more than adequate in terms of sample size for the survey conventions.

While the sample size is more than adequate, the composition of the sample is also important or even more so. As shown in Table 5.2, the teachers came from a variety of schools, taught various types of Chinese language courses to a wide range of students at different levels. Although the proportions may not be exactly consistent with the population of Chinese language teachers in Singapore, they were considered as being a good representation.

Primary Sample Of the primary teachers, there is a female preponderance with 10 % male and 90 % female. The majority of 85 % came from the government schools while the remaining 15 % from the other types of schools. There is a wide range of teaching experience, with 44 % having 10 or less years of teaching, 49 % between 11 and 20 years, and 11 % more years. The classes the teachers taught in 2014 are evenly spreading from Primary 1 to Primary 6, teaching between two and three levels. When responding to the survey, the teachers' focused classes are evenly spreading throughout the six primary levels.

Secondary Sample Of the secondary teachers, there is also a female preponderance with 14 % male and 86 % female. The majority of 68 % came from the government schools while the remaining 32 % from the other types of schools. There is a wide range of teaching experience, with 51 % having 10 or less years of teaching, 29 % between 11 and 20 years, and 20 % more years. In 2014, 20 % of the teachers taught Secondary 1 and the remaining 80 % are evenly distributed to the three higher classes. For responding to the survey, 59 % of the teachers focused on Secondary 1 and 2, with the remaining 41 % Secondary 3 and 4. While 64 % of them taught either High Chinese or Express Chinese, the remaining 36 % taught either Normal Chinese or Basic Chinese.

Instruments

Besides questions of personal information, a competence-by-level matrix (Fig. 5.1) was created. For each of the six levels of language proficiency, there are seven levels of complexity, giving a total of 42 broad categories which form the focus of the present study. In the survey, these were organized into two sets, with Levels 1–4 for Primary 1 to Primary 6 and Levels 5–7 for Secondary 1 to Secondary 4.

When gathering the data, an introduction to the purpose of the survey was first made, and the respondents were assured of the confidentiality of their responses. Then, responding to the survey, the teachers were requested to focus on one level in accordance with their teaching experience. The choice of the level was left to the teacher's discretion as it was believed that she would tend to focus on the level at which teaching and learning difficulties were more acute.

Table 5.2 The sample

	Primary (N = 221)	Secondary (N = 193)
Sex		
Male	10.0	14.0
Female	90.0	86.0
School type		
Government	85.1	67.9
Government aided	9.1	4.1
Special assistance	6.2	8.3
Autonomous	0.8	11.9
Independent	0.8	7.8
Years of teaching		
3–5	20.7	25.9
6–10	23.3	25.4
11–15	30.6	15.5
16–20	18.5	13.5
21–25	4.7	9.3
26–30	2.2	2.6
31 or more	0.0	7.8
Classes taught in 2014		
Primary 1/Secondary 1	16.4	19.9
Primary 2/Secondary 2	18.5	27.7
Primary 3/Secondary 3	16.0	26.7
Primary 4/Secondary 4	16.0	25.7
Primary 5	18.7	Not applicable
Primary 6	14.5	Not applicable
Class focused		
Primary 1/Secondary 1	16.6	20.7
Primary 2/Secondary 2	16.2	38.3
Primary 3/Secondary 3	17.4	19.7
Primary 4/Secondary 4	17.0	21.2
Primary 5	17.4	Not applicable
Primary 6	15.4	Not applicable
Chinese language courses taught in 2014		
High Chinese language	Not applicable	31.0
Express Chinese language	Not applicable	33.0
Normal Chinese language	Not applicable	23.4
Basic Chinese language	Not applicable	12.7

Note: For *Classes taught in 2014*, multiple answers allowed

Language proficiency	Primary 1 to 6				Secondary 1 to 4		
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6	Level 7
Listening							
Speaking							
Reading							
Writing							
Oral interaction							
Written interaction							

Fig. 5.1 The competence-by-level matrix

The teachers were to respond with two different, though related, perspectives: (1) the teacher's felt training needs and (2) the teacher's perception of student difficulties in attaining the specified learning objective. Open-ended questions asked the teachers to write additional comments and suggestions.

Analysis

To uncover the trends of the teachers' felt training needs and perceived student difficulties, percentages were calculated based on the number of responses (endorsements) and not the number of respondents (teachers), calculated thus for each skill: percentage = (endorsements at a level)/(endorsements at all levels)*100 %. This enabled the calculation to be done first for each level within each language skill. The skill-based percentages were later summed for comparisons across the six language skills. The resultant percentages show the relative "importance" of the specified language skills in terms of felt training needs and perceived student difficulties.

Results

The survey results are herewith presented with reference to the three research objectives stated earlier. This is followed by a presentation of the responses (teachers' suggestions) to the open-ended questions.

Objective 1: To Identify the Training Needs of Chinese Language Teachers with Regard to the Various Types and Levels of the Language Skills

Table 5.3 (Fig. 5.2) shows the percentages for training needs felt by primary and secondary teachers. It is obvious that, with some slight deviations, the felt training needs are highly similar among the six skills and vary with levels. At the primary level, training needs are highest for Level 1, followed by Level 4, with Levels 2 and 3 being lower. At the Secondary level, training needs increased from Level 5 to Level 6 and then decreased somewhat at Level 7; however, the difference between Levels 6 and 7 is much less than between Levels 5 and 6. On the whole, there is a curvilinear (nonlinear) trend in the overall percentages for the seven levels. In other words, the felt training needs fluctuate with levels rather than forming a monotonically increasing trend which is commonly assumed in curriculum design.

It is interesting to find out how the six language skills are related to one another in terms of felt training needs of the teachers. As shown in Table 5.4, with the exception of Listening which has mostly nonsignificant correlations with the other five

Table 5.3 Felt training needs by skills and levels

	Primary				Secondary		
	L1	L2	L3	L4	L5	L6	L7
Listening	35.3	17.6	16.5	30.6	15.0	56.7	28.3
Reading	33.9	17.5	19.1	29.5	20.6	42.6	36.9
Speaking	35.1	18.2	16.9	29.9	23.2	35.4	41.4
Writing	34.0	18.2	16.4	31.4	21.0	36.4	42.6
Oral interaction	39.1	18.5	16.3	26.1	21.6	37.6	40.8
Written interaction	35.9	18.3	15.7	31.0	23.5	39.5	37.0
Overall	35.6	18.1	16.8	29.8	20.8	41.4	37.8

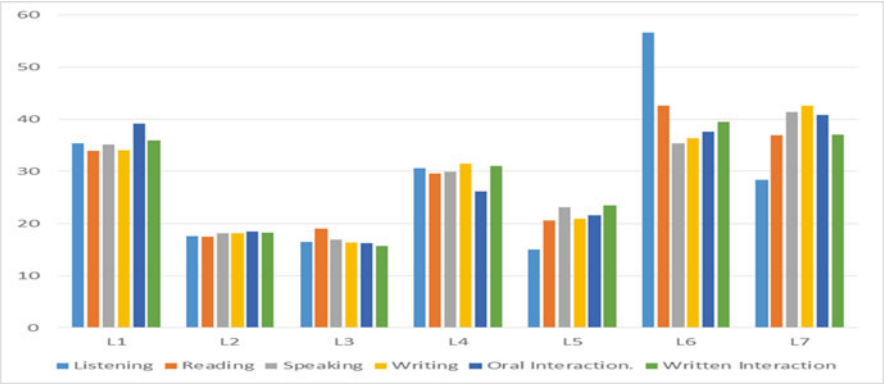

Fig. 5.2 Felt training needs by skills and levels

Table 5.4 Correlations of felt training needs

	Listening	Reading	Speaking	Writing	Oral interaction	Written interaction
Listening	1.00	.94	(.68)	(.70)	(.73)	.83
Reading		1.00	.92	.93	.93	.97
Speaking			1.00	.99	.97	.96
Writing				1.00	.95	.96
Oral interaction					1.00	.96
Written interaction						1.00

Note: Coefficients are statistically significant (df 4, two-tailed, $p < .05$), except those in parentheses

Table 5.5 Perceived student difficulty by skills and levels

	Primary				Secondary		
	L1	L2	L3	L4	L5	L6	L7
Listening	39.4	12.1	27.3	21.2	17.6	34	45.3
Reading	33.3	19.7	18.8	28.2	23.6	37.4	39.0
Speaking	29.5	18.2	20.5	31.8	18.0	42.7	39.3
Writing	34.0	18.2	16.4	31.4	22.7	37.7	39.6
Oral interaction	39.1	18.5	16.3	26.1	18.9	34.9	46.2
Written interaction	35.9	18.3	15.7	30.1	22.6	34.6	42.9
Overall	35.2	17.5	19.2	28.1	20.6	36.9	42.1

language skills, there are high correlations among this latter set of five language skills. This suggests that the felt training need for Listening is rather independent of the other five language skills and that, for the other five, when the teacher felt the training need for one, she is highly likely to feel the needs for training in the others.

Objective 2: To Ascertain Chinese Language Teachers' Views on the Attainability of the Various Types and Levels of the Language Skills

Table 5.5 (Fig. 5.3) presents the percentages for perceived student difficulty of the primary and secondary teachers in terms of levels of language skills. It can be seen that for the six language skills, the percentages among the levels are highly similar. As is true for felt training needs reported above, at the primary level, Level 1 was seen as the most difficult, followed by Level 4, with Levels 2 and 3 being lower. At the secondary level, perceived difficulty increased from Level 5 to Level 6 and then Level 7. However, there is a larger gap between Levels 5 and 6 than between Levels

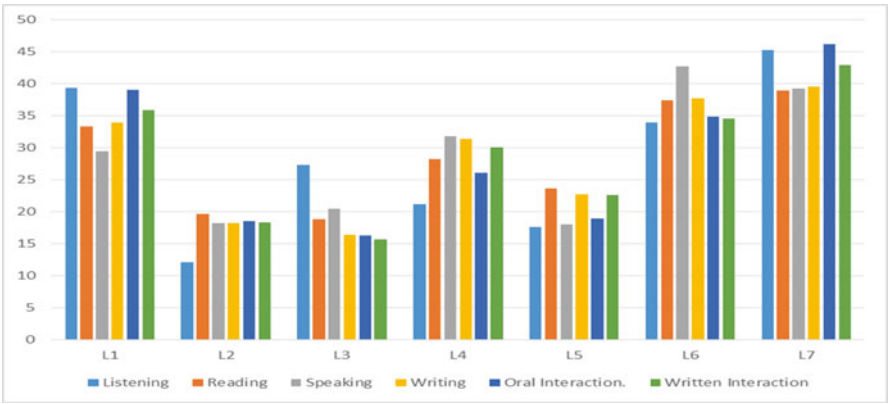

Fig. 5.3 Perceived student difficulty by skills and levels

Table 5.6 Correlations of perceived student difficulty

	Listening	Reading	Speaking	Writing	Oral interaction	Written interaction
Listening	1.00	.82	(.74)	(.77)	.89	.82
Reading		1.00	.93	.99	.95	.97
Speaking			1.00	.93	.83	.86
Writing				1.00	.93	.98
Oral interaction					1.00	.97
Written interaction						1.00

Note: Coefficients are statistically significant (df 4, two-tailed, $p < .05$), except the one in parentheses

6 and 7. The trend is again nonlinear (curvilinear), contrary to the commonly expected increasing difficulty from earlier to later levels; the non-monotonic sequence is similar to that found for felt training needs.

It is of interest to find ascertain how the six language skills are related to one another in perceived student difficulty. As Table 5.6 shows, with the exception of Listening which has both significant and nonsignificant correlations with the other five language skills, there are high correlations among this latter set of five language skills. This suggests that the perceived student difficulty for Listening is independent of Speaking and Writing but dependent on Oral Interaction and Written Interaction. At the same time, the other five language skills have high correlations. In short, perhaps with the exception of Listening, in the eye of the teachers, there is a general pattern of student difficulty among the students.

Table 5.7 Overall felt training needs and perceived student difficulty by levels

	Felt training needs	Perceived student difficulty
Level 1	35.6	35.2
Level 2	18.1	17.5
Level 3	16.8	19.2
Level 4	29.8	28.1
Level 5	20.8	20.6
Level 6	41.4	36.9
Level 7	37.8	42.1

Note: r = .99, df 5, two-tailed, $p < .05$

Fig. 5.4 Felt training needs and perceived student difficulty by levels

Objective 3: To Ascertain the Relations between Chinese Language Teachers' Felt Training Needs and Their Perceived Student Difficulty in Attaining the Language Skills

With the observed trends in felt training needs and perceived student difficulties, it is interesting to note that the correlation between them is a near perfect r = 0.99 as shown in Table 5.7. It is conceptually reasonable here to assume that the teachers' felt training needs for the teaching of the six language skills has been caused by their perception of their perceived student difficulty in teaching them. Figure 5.4 clearly depicted the close relationships between felt training needs and perceived student difficulty.

Responses to Open-Ended Questions

In addition to questions pertaining to the three research objectives and the results which have been presented above, the teachers were requested to respond to two open-ended questions to make additional suggestions. The responses are summarized hereafter.

From the primary teachers, there were 57 coded written responses which were grouped as shown in Table 5.8. As shown therein, there are seven categories that deserve attention, with the need for training in teaching exceptional students in the lead. This is followed by three suggestions which have more than 10 % of the responses: training in the teaching of composition writing, using ICT and media, and alternative/interesting pedagogies.

To the second open-ended question of students' difficulties, there are 79 coded written responses. These were grouped as shown in Table 5.9 below. Leading the list is word recognition and vocabulary development with a high 39 %. Following this are lack of interest, attitude, and confidence together with *Hanyu Pinyin*, each with

Table 5.8 Additional felt training needs of primary teachers

	Percent (N = 57)
Teaching exceptional students	29.8
Composition writing	15.8
ICT and other media for teaching	15.8
Alternative/interesting pedagogy	12.3
Classroom management	5.3
Hanyu Pinyin	5.3
Translation	3.5
Miscellaneous	12.2

Table 5.9 Additional perceived student difficulty by primary teachers

	Percent (N = 79)
Word recognition, vocabulary development	39.2
Interest, attitude, confidence	12.6
Hanyu Pinyin	11.4
Lacking home support	8.9
Reading comprehension	8.9
Composition writing	7.6
Miscellaneous	11.4

Table 5.10 Additional felt training needs of secondary teachers

	Percent (N = 107)
Composition, writing, styles	26.2
Oral examination	14.0
Exam papers, test items	13.1
Reading comprehension	12.1
Multimedia, ICT	6.5
Interaction	5.6
Precis writing	5.6
Vocabulary	5.6
Miscellaneous	11.2

Table 5.11 Additional/ specific training needs

	Percent (N = 52)
Vocabulary	46.2
Reading comprehension	21.1
Expression	15.4
Time for teaching	13.5
Translation	3.8

more than 10 % of the responses. Near to these are lacking home support and reading comprehension and not far behind difficulty in composition writing.

From the secondary teachers, as shown in Table 5.10, training in the teaching of composition tops the list of additional felt needs. This is followed by training related to oral examination, examinations, and reading comprehension; these have more than 10 % of the open responses. However, training relevant to ICT, interaction, *precis* writing, and vocabulary were also present, though with small percentages.

To the second open-ended question of students' difficulties, there are 52 coded written responses. As can be seen from Table 5.11, in the lead is difficulty with vocabulary and, to a lesser degree, reading comprehension. Besides these, difficulty in expression and shortage of time for teaching have more than 10 % of the open responses.

Discussion and Recommendations

Before a discussion is attempted, the main findings of the present study are summarized below.

1. Consistently for all six language skills, the primary teachers felt greater training needs for Levels 1 and 4 than for Levels 2 and 3. However, the secondary teachers felt greater training needs for Level 6 and Level 7, although there is a smaller difference between Levels 6 and 7 than between Levels 5 and 6.

2. Consistently for all six language skills, the primary teachers perceived Levels 1 and 4 as being more difficult for students to attain than Levels 2 and 3. However, for the secondary teachers, difficulty levels increase from Level 5 to Level 7, with a smaller difference between Levels 6 and 7 than between Levels 5 and 6.
3. For both primary and secondary teachers, there is a very strong correlation between the teachers' felt training needs and their perceived student difficulties.
4. Primary teachers' responses to the open-ended questions suggest that training is also needed in the teaching of exceptional students, composition writing, ICT and media for teaching, and alternative/interesting pedagogy. They also pointed out that students' main difficulties are word recognition (vocabulary), lack of interest/positive attitude/confidence, and *Hanyu Pinyin*.
5. Secondary teachers' responses to the open-ended questions suggest that training is more needed in the teaching of composition, oral examination, and vocabulary and reading comprehension. The need for training in setting examination papers and writing of test items is also indicated. More time for teaching the language is also suggested.

Much of the above findings are not surprising. Teachers feel the needs for training because they have encountered or expect to encounter learning problems among their students. The large proportion of teachers feeling the needs for training indicates that the Singapore Centre for Chinese Language has an important role in updating the teachers with knowledge and skills that will enhance their teaching effectiveness in the classroom.

Teaching language (be it Chinese or any other language) is difficult (and no one says it is easy). The finding that teachers highlight skills involving reading as difficult is understandable. This is expected as the Chinese writing system is quite independent of its pronunciation system, making word recognition, reading comprehension, and recall much more difficult than, say, English which the students learn concurrently. Thus, ways and means need be explored and found to ensure effective word recognition, reading comprehension, and memory for the Chinese characters than mere practice, practice, and more practice.

The competence-by-level matrix logically presents the target skills in ascending order of difficulty assumed to be inherent in Chinese Language, with Level 1 assumed to be the easiest for primary students to Level 7 being the most difficult for Secondary students. This is an approach commonly used in developing a language curriculum, since later learning has to be built upon earlier learning, following the basic educational principles of "from easy to difficult" and "from the known to the unknown."

However, the surveyed teachers do *not* see the levels thus sequenced in terms of ease in attainment by students. This does not, however, invalidate the logical difficulty levels as depicted in the competence-by-level matrix but is a reminder that, when implementing a curriculum, there are other considerations that need be taken into consideration. In other words, the levels of language skills are *targets* (referred to as *goals*, *objectives*, and *standards* in different documents) but how to reach them in the classroom reality is a different matter. In short, specifying *what to teach* is not the same as *how to teach*.

It is a truism that how well and timely students are able to reach the expected levels of the six language skills will depend on other factors, some of which are beyond the teacher's control: the students' current level of proficiency, home support for learning the language, motivation and attitude of students and their parents, and the general atmosphere for the language in the immediate community and the society at large, to name a few obvious ones. Saying so is not finding an excuse for the teachers; in teaching language (or any other subjects), teachers can do just that much and not more. Of course, within the limiting conditions, Chinese Language teachers need to maximize their capability and do *that much*.

The finding that the teachers find Level 1 most difficult followed by Level 4 deserves attention. As pointed out earlier, there are high correlations between the teachers' felt training needs and their perceived student difficulties. It is necessary to understand why they have given such responses. Short of empirical data, an explanation is proffered below.

At Level 1, the teachers are faced with young students who have had little experience with Chinese language before admission to the primary school, although many of these children would have learned some basics of Chinese Language during their preschool days. In a sense, they are relatively "new" to the learning of the language, at least in the eye of the teachers teaching Primary 1. This being the case, the teachers would have a real or perceived challenge to bring the students up to the Level 1 targets. This might have caused them to see Level 1 as the most difficult for students to attain within a year or so in the early grades.

The teachers' felt student difficulties might be confounded by the fact that the new Primary 1 students are in a transition from a more informal learning environment in the preschool years to a more formal setup in Primary 1 classes. In this case, the teachers need to teach the Primary 1 students Chinese Language and at the same time how to behave in formal classrooms. Needless to say, this confounding effect affects not only teachers of Chinese Language but all other subjects. Nevertheless, it adds to the difficulty just the same.

At Level 4, toward the end of the primary school years, there is the high-stake Primary School Leaving Examination (PSLE) of which Chinese Language is one of the four examined subjects, together with English, Mathematics, and Science. With this high-stake examination nearing, the teachers will naturally see Level 4 (Primary 6) as being difficult for students to attain. Besides, teachers' efficacy is indirectly inferred from or even directly evaluated on with reference to students' performance in the PSLE. This, again, naturally creates a pressure on the teachers causing them to see Level 4 as being difficult.

As the survey results show, the teachers see the levels as a *curvilinear* non-monotonic progression. To meet the training needs of the Chinese Language teachers, research and training at both ends of the spectrum (i.e., Levels 1 and 4) need be given more attention. Needless to say, the best way to validate a curriculum is to test it out on students who are supposed to benefit from it. However, while it is a worthwhile attempt in the future, the present surveys serve as a useful intermediary step between the *intended* curriculum and the *implemented* curriculum with regards to the curriculum's attainability.

As regarding the findings at the Secondary level, that teachers do not see Level 5 (Secondary 1) as the most difficulty as primary teachers see Level 1 (Primary 1) is not surprising. Secondary teachers could have seen Level 5 (Secondary 1) as a continuation of Level 4 (Primary 6) and not a fresh start. Moreover, the stringent PSLE results for the Chinese Language might have a reassuring effect on the secondary teachers, thus enhancing their confidence in the students' ability to reach the targets.

That secondary teachers perceived Level 6 as more difficult than Level 7 (contrary to the competence-by-level matrix) may be a reflection of what has happened in the school reality in the Singapore context. It is a common practice that secondary teachers make effort to cover the four-year syllabuses of not only the Chinese language but also other subjects within the first three years of secondary schooling, that is, covering four years' work in three years. In short, to prepare the students for the General Certificate of Education "O"-Level Examination to be taken at the end of Secondary 4, density of teaching peaks at Secondary 3 rather than Secondary 4. Once this is reasonably achieved, the year for Secondary 4 is very much for revision than for teaching something new. This would make Secondary 3 (Level 6) more difficult than Secondary 4 (Level 7), hence the reversal of the difficulty level.

As alluded to earlier, knowing *what to teach* (via the competence-by-level matrix) is different from knowing *how to teach*. This is analogous to setting the destiny and reaching it. Thus, in addition to familiarizing teachers with the targets, attention needs be accorded to specific training needs related to the teaching of exceptional students, essay writing, ICT and media for teaching, and alternative or interesting pedagogy. These are training needs felt by the teachers over and above the content knowledge. Courses and workshops on these identified problems will help the Chinese Language teachers to become more effective and, for the students, the learning of the language more interesting and efficient, with the ultimate goal of better achievement.

The main difficulties identified by the teachers of word recognition (vocabulary), lack of interest, positive attitude and confidence, and *Hanyu Pinyin* also deserve attention. Interest, attitude, and confidence may have a capping effect on the students' achievement as they will put in just that much effort to learn and feel comfortable with the language. It is readily appreciated that finding more effective ways to build up students' vocabulary is important as Chinese characters are challenging when compared with English words, and in this connection, *Hanyu Pinyin* can be a useful tool if taught and used properly to help in this regard.

Implications for Research and Training

The findings of this survey have implications for future planning of research and training. Specific implications of the surveys are as follows:

1. More research on the difficulties encountered by students (and hence difficulties in teaching) especially those learning targets involving learning and using

Chinese characters. Alternative teaching methods and language learning strategies need be invented and utilized with reference to relevant studies in Chinese linguistics, psycholinguistics, sociolinguistics, and even neurolinguistics. Learning activities and materials need be developed and trialed on specific groups of students. When found effective, the methods, activities, and materials will have to be made available to teachers.

2. The approach suggested above is a problem-based approach to research and training which will be more relevant to the needs of students and their teachers in solving and minimizing difficulty in learning the language.
3. On a practical plane, as greater difficulty is perceived by the teachers for a certain levels, training and development efforts need be focused on those levels identified in the survey. These are the key stages at which more help (in the forms of training and materials) is indicated and critical: Primary 1, Primary 6, and Second 3–4. Of course, focusing on these critical levels should not lead to total neglect of the levels in-between where some help is still needed.
4. It will be useful to be specific with the view to find solutions for specific learning difficulties as identified by the teachers, for example, strategies for word recognition are memorization of Chinese characters which pose a basic problem of learning the language. Other specific aspects where research and training are needed have been indicated by the teachers' responses to the open-ended questions.
5. For a thorough understanding of the problems encountered by teachers in their day-to-day teaching, it is useful to conduct surveys on primary and secondary teachers with regard to the specific problems and even their efforts and successes in solving some of the problems. Such information will be helpful for formulating research studies and also disseminating good practices. The information will make it possible for research to be truly problem-based with relevance to the teachers' and students' needs.

Conclusion

In sum, the present study might not have found anything unusual or unexpected for the teaching of Chinese Language in Singapore schools. It, however, confirms the needs for training as felt by the teachers with reference to their perception of learning difficulty they expect to be encountered by students. The non-monotonic curvilinear progression, instead of a linear one, of the seven levels of the six skills also clearly indicates where research and training are needed.

It is a truism that only through concerted, coordinated, and planned efforts based on empirical information, such as those provided by the present surveys, that the problems of learning and difficulty in teaching Chinese Language can be systemically ameliorated, largely if not totally.

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Chapter 6
Assessment Literacy of Singapore Chinese Language Teachers in Primary and Secondary Schools

Limei Zhang and Kaycheng Soh

As language assessment has been widely used in educational programs in recent years, there is a need to improve classroom teachers' knowledge of assessment. Language teachers' knowledge of assessment principles and practices helps them make sound judgments and inferences about their students' learning and performance and thus informs instruction. The term *language assessment literacy* refers to language teachers' knowledge of measurement and its application to classroom teaching (Inbar-Lourie 2008; Malone 2013; Stiggins 1991, 2001; Taylor 2009).

The notion of assessment literacy has shifted over the years due to the changes in the views of assessment and its relationship with learning. Influenced by the psychometric and positivistic paradigm, traditional view of assessment emphasizes objectivity and accuracy (Spolsky 1978, 1995). Language testing was therefore dominated by discrete-point items which tested language structures in isolation of contexts. Traditionally, testing activities are normally carried out at the end of a leaning period, hence *assessment of learning* or *summative assessment* (Gipps 1994; Wolf et al. 1991). With this perspective, testing is viewed as an additional activity, as a mere appendage to teaching (Berger 2012). In that context, measurement experts rather than classroom teachers are expected to have specialized knowledge of test development and interpretation of test outcomes.

The popularity of communicative approaches to language teaching since 1980s has brought about changes in views of language assessment. As the focus of attention has been shifted to appropriate use of language in specific contexts, language testing attaches importance to meaningful and authentic assessment of language in real-life situations rather than evaluating language structures in isolation (Bachman 1991). Specifically, language assessment is viewed as *assessment for learning*

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which helps improve teachers' instruction and students' learning (Gipps 1994; Stiggins 2002). In contrast to traditional view, assessment is perceived as an integral part of teaching and learning. This new perspective requires classroom teachers to design assessment in classroom settings and integrate the obtained information with instruction to promote teaching and learning (Fulcher 2012; Malone 2008). Thus, it is important that language teachers have sufficient knowledge in measurement as applied to language assessment, hence language assessment literacy.

Due to the growing importance of language assessment literacy and its place in teacher training, researchers have paid increasing attention to the investigation of language teachers' assessment literacy (Boyles 2005; Fulcher 2012; Inbar-Lourie 2008). However, previous studies are concerned with examining and promoting assessment literacy among teachers who teach English as a second or foreign language. To date, very few studies have been conducted to investigate assessment literacy of teachers who teach Chinese Language. Considering the growing demand in Chinese language, it is useful to investigate Chinese Language teachers' assessment literacy for a better understanding of their training needs and promote their assessment knowledge, especially in Singapore where all ethnic Chinese students and some non-Chinese students learn the language as a "second language."

This study was therefore designed to fill the knowledge vacuum by surveying Singapore's Chinese Language teachers with the aim to find out what they know and do not know about essential concepts of assessment and to thereby identify their training needs.

Defining Assessment Literacy

The term assessment literacy was first coined by Stiggins (1991) to refer to practitioners' understanding of the differences between sound and unsound assessment procedures and use of assessment outcomes. Assessment literates should be clear about assessment purposes, have the ability to choose appropriate methods of assessment, conduct assessment effectively, and avoid pitfalls in the process of assessment practices.

Boyles (2005: 18) argues that language teachers need to have knowledge of "*analyzing and reflecting upon test data in order to make informed decisions about instructional practice and programme design.*" Consistent with the emphasis on assessment selection and creation as well as data analysis and interpretation, Malone (2013: 330) characterizes language assessment literacy as "*stakeholders' familiarity with measurement practices and the application of this knowledge to classroom practices*." Apart from exploring the concept and definition of assessment literacy, researchers have conducted studies examining teachers' assessment knowledge and discussing how to enhance their assessment literacy. To this we now turn.

Studies of Assessment Literacy

With the necessity of promoting assessment literacy, researchers have investigated issues regarding the essentials of language assessment literacy and the promotion of assessment knowledge. For example, Boyles (2005), in her study presented at the National Assessment Summit, examines successful development of teachers' assessment literacy in the United States and provides a description of resources for assessment literacy development, including nationwide professional meetings, online resources of professional development. Online training, workshops, and national as well as regional programs are recommended.

On this basis, she suggested that a universal understanding of the components of assessment literacy be developed and criteria of good assessment be specified.

Built upon the understanding of the concepts, skills, and strategies that a teacher needs to know, Inbar-Lourie (2008) elaborates on the knowledge base of language assessment literacy from the perspectives of the rationale for assessment, ability to be assessed, and the process of assessment. With a focus on the development of courses for language assessment, Inbar-Lourie then proposes the construction of a core knowledge framework for language assessment courses. Later, Fulcher (2012) examined international language teachers' training needs using questionnaire data of 278 international teachers from seven countries who taught English as a second or foreign language. The survey results inform an extended framework in which assessment literacy was delineated as incorporating knowledge, skills, and abilities required for language testing; processes, principles, and concepts that guide the assessment practice; and the historical, social, political, and philosophical framework underlying assessment practice and guidance.

Of late, Malone (2013) conducted a study comparing language instruction experts' and language testing experts' feedback on an online tutorial for language assessment basic knowledge. Forty-four US foreign language instructors and 30 language testing experts responded to the survey and participated in group interviews. Analysis indicates language testing experts and language instructors differed in three broad aspects: definitions of testing and testing concepts, uses of tests, and presentation as well as delivery of information. Findings from the study revealed the challenges of developing materials for promoting language assessment literacy in that experts with different professional experience and perspectives might differ in their beliefs in assessment fundamentals.

In the Singapore context, Koh's (2011) study seems to be the only one of such research. Koh examined the improvement of assessment literacy through professional development among Primary 4 and 5 teachers of English, Science, and Mathematics. Two groups of teachers involved in the study were (1) teachers receiving ongoing and sustained professional development in designing classroom assessment and rubrics and (2) teachers attending short-term professional development workshop in authentic assessment. The results of the study indicated that teachers involved in ongoing professional development improved their assessment literacy significantly which enhanced the quality of student work consequently, while the other group did not achieve equally visible improvement.

Measuring Assessment Literacy

To have a better understanding of teachers' assessment literacy, researchers have developed instruments to measure assessment literacy. Adapted from the *Teacher Assessment Literacy Questionnaire* (Plake and Impara 1993), Mertler (2005) developed the *Classroom Assessment Literacy Inventory* which includes 35 items measuring teachers' general concepts about testing and assessment and items about participating teachers' background information.

A more recent instrument for assessment literacy was developed by Fulcher (2012) which includes 23 closed-ended items measuring language teachers' knowledge in test design and development, large-scale standardized testing, classroom testing and washback, and validity and reliability. In addition, it also comprises constructed-response items eliciting teachers' feedback on their relevant experience in language assessment as well as background information.

In spite of increasing number of studies conducted to investigate assessment literacy measuring teachers' assessment knowledge and promoting assessment basics, very few focus on primary and secondary teachers' assessment literacy in Singapore and Koh's (2011) seems to be the only exception. Thus, using a newly designed instrument, the present study was therefore designed to examine the assessment literacy of Singapore Chinese Language teachers in primary and secondary schools to understand the situation and identify their training needs in language assessment literacy.

Objectives of This Study

With the above summaries of studies as the background, the present study has the following objectives:

1. To find out what Chinese Language teachers in Singapore know and do not know about essential concepts of assessment.
2. To identify the specific shortfalls of Chinese Language teachers' assessment literacy and their training needs.

Method

Respondents

The respondents were 323 Chinese Language teachers (170 from primary schools and 153 from secondary schools and junior colleges) who attended in-service courses at the Singapore Center for Chinese Language from January to March 2015. Table 6.1 shows the demographic characteristics of the teachers. For a sample of this size, the confidence interval is 5.15 % with 95 % confidence level (The Survey

Table 6.1 Demographics of the respondents

		Primary (%)	Secondary and junior college (%)
Gender	Male	12.4	21.6
	Female	87.6	78.4
School	Primary	100.0	–
	Secondary	–	64.0
	Junior college	–	36.0
Years of teaching	Less than 3 years	31.8	23.5
	3–6 years	23.5	15.7
	7–10 years	18.2	9.8
	More than 10 years	26.5	51.0
Qualification	Nongraduate	12.9	0.7
	Graduate	87.1	99.3
Professional training	Completed	97.6	93.0
	Yet to complete	2.4	7.0
Measurement course	Elected	57.1	38.6
	Not elected	42.9	61.4
Measurement training	Needed	78.2	77.1
	Not needed	21.8	22.9

System 2012) for the estimated population of 3000 Chinese language teachers in Singapore schools.

As shown in Table 6.1, there is a female preponderance in both the primary and secondary and junior college (hereafter *secondary*) groups, less in the latter. This is typical of the teaching profession in Singapore, although the proportions may not be the same as those in the two teacher populations. Of the secondary group, 64 % taught in secondary schools while 36 % in junior colleges. The primary teachers tend to have less years of teaching experience with 55 % having six or less years, compared with 39 % of the secondary teachers having the same years of teaching. In terms of qualification, 87 % of the primary teachers were university graduates whereas, as would be expected, 99 % of the secondary were. Around 95 % of both groups completed their professional training. However, only slightly more than half of the primary teachers and slightly more than a third of the secondary teachers studied educational measurement as an elective course in their pre-service training. This being the case, slightly more than three quarters of both groups indicated their need for assessment training.

Assessment Literacy Scale

The data was collected by using the Assessment Literacy Scale designed by the present writers. The Scale has two parts: the first part consists of 40 four-option multiple-choice items covering the four aspects of assessment literacy as shown in Table 6.2. The four domains are essential knowledge for proper understanding and

Table 6.2 Topics and distribution of items

Topic	Item numbers	Numbers of items
Nature and functions of assessment	1–10	10
Design and use of test items	11–20	10
Interpretation of test results	21–30	10
Concepts of reliability, validity, and basic statistics	31–40	10

use of assessment information, ranging from the more abstract (e.g., nature of assessment) to the more practical (e.g., basic statistics). These domains are consistent with those suggested by Witte (2010) and similar to those covered in Mertler (2005). When crafting the items, relevant chapters of two classic educational measurement textbooks (Hopkins 1998; Linn and Miller 2005) were consulted to ensure content validity.

There are ten items for each of the four domains of (1) nature and functions of assessment; (2) design and use of test items; (3) interpretation of test results; and (4) concepts of reliability, validity, and basic statistics. The number of items was considered necessary and adequate to represent each of the four domains thereby providing valid results. In this sense, the test was conceptualized as a domain-referenced test with the items being a sample representing possible items covering the content. In short, they represent important and basic concepts relevant to the four domains of educational measurement. The items take the multiple-choice format to ensure objectivity in scoring.

Analysis

Means and standard deviations were calculated for items of the four subtests as well as the test as a whole. Percentages were also calculated for each of the 40 items to enable comparisons between primary and secondary levels as to the teachers' understanding, or the lack of it, in specific knowledge of assessment.

For group comparisons, the conventional *t*-test was not used because the two groups of teachers formed convenient or captive samples, and they were not random samples of their respective populations. Moreover, the interest of the study is the *magnitude* of the observed group difference and not the *probability* of chance occurrence of the observed difference. In place of the inferential *t*-test, comparisons were made by using descriptive effect size in terms of Cohen's *d* with the formula below:

$$\text{Effect size (Cohens'}d\text{)} = \text{Group difference / Pooled standard deviation}$$

The observed effect size (*d*) was then evaluated by applying Cohen's (1988) criterion, thus:

0.0–0.2	Trivial effect; Negligible difference
0.2–0.5	Small effect; Small difference
0.5–0.8	Medium effect; Moderate difference
0.8 and above	Large difference

Results

Overall and Subtests

As Table 6.3 shows, for the test as a whole, both groups scored 20, that is, only half of the possible maximum of 40. At the subtest level, both groups scored slightly more than half of the possible maximum for Subtest 1 (nature and functions of assessment), exactly half of Subtest 2 (design and use of test items), slightly less than half for Subtest 3 (interpretation of test results), and much lower for Subtest 4 (reliability, validity, and basic statistics). When the two groups were compared, all the differences indicate trivial effect (varying from $d = .05$ to $d = .14$), and they therefore should be considered as scoring on par with one another.

Table 6.4 shows the intercorrelations among the four subtests. As shown therein, most of the correlations are low (varying from $r = .00$ to $r = .33$), although some are statistically significant ($p < .05$). The correlations with Subtest 4 (reliability, validity, and basic statistics) tend to be particularly weak for the primary teachers.

Those statistically significant correlations vary from $r = 0.16$ to $r = 0.33$, indicating that the subtests shared from 3 % to 11 % common variances. This suggests that knowledge in one domain has not much to do with knowledge in the other three domains.

Table 6.3 Comparisons of primary and secondary teachers' responses to the Scale at the subscale level

Topic	Primary (N = 170)		Secondary (N = 153)		Mean difference	Effect size
	Mean	SD	Mean	SD		
Overall	20.1	4.2	19.5	4.6	0.6	0.14
Nature and functions of assessment	6.2	1.5	6.1	1.7	0.1	0.06
Design and use of test items	5.1	1.7	5.0	1.8	0.1	0.06
Interpretation of test results	4.8	1.9	4.6	1.7	0.2	0.11
Reliability, validity, and basic statistics	3.9	1.8	3.8	1.9	0.1	0.05

Table 6.4 Correlations among assessment aspects

	1	2	3	4
1. Nature and functions of assessment	–	0.22	0.33	0.19
2. Design and use of test items	0.20	–	0.16	(0.00)
3. Interpretation of test results	0.31	0.31	–	(0.13)
4. Reliability, validity, and basic statistics	0.21	0.20	0.32	–

Note: (1) Coefficients in the upper triangle are for primary teachers, those in the lower triangle for secondary teachers. (2) Except those in parentheses, all other coefficients are statistically significant ($p < .05$, two-tailed)

Items

Table 6.5 presents the results of comparisons made between the primary and secondary teachers at the item level.

Nature and Functions For this subtest, both primary and secondary teachers have done well on five of the ten items (Items 1, 2, 5, 6, and 7) with 70 % or more of the teachers answered correctly. The responses show that they are generally clear about the instructional, formative, and diagnostic functions of assessment.

However, as the lower percentages (varying from 24 % to 58 %) for the other items suggest, they do not seem to be sure about the more technical concepts of assessment such as the difference between norm-referenced (Item 8) and criterion-referenced (Item 9) assessment and the requirement of very easy items to form a diagnostic test (Item 10).

The effect sizes suggest that the primary teachers tend to have better understanding of the nature and functions of assessment (Items 1 and 6) than secondary teachers, while the secondary teachers have better understanding of norm-referenced assessment (Item 8).

Design and Use of Test Items For Subtest 2, both primary and secondary teachers have done well on two of the ten items (Item 18 and 19). More than 70 % of the teachers answered the questions correctly. This suggests that they are aware of the importance of life experience in students' written expression and the possibility of gender, race, and socioeconomic status biases.

They also seem to be aware of the usefulness of multiple-choice items in assessing reading comprehension (Item 12), the better way of assessing students' written expression (Item 16), and the influence of teacher' subjectivity in assessing essays (Item 20). The three questions were answered correctly by between 52 % and 67 % of the teachers.

However, much lower percentages of the teachers (19–37 %) answered the remaining questions correctly. This shows that the teachers are barely aware of the advantages of objective marking of multiple-choice items and the usefulness of scrambled sentences for assessing reading comprehension.

Table 6.5 Comparisons of primary and secondary teachers' responses to the Scale at the item level

Item	Primary (N = 170) (%)	Secondary (N = 153) (%)	Effect size (Cohen's d)
Nature and functions			
1. What is the most important function of assessing students? *Let students know their achievement and areas for improvement.*	90.0	81.0	1.4
2. How can teachers use testing results to help students continuously improve their achievement? *Use test results for formative assessment*	74.1	70.6	0.4
3. Which of these is NOT an educational function of assessment? *To make choices*	49.4	58.2	−1.0
4. Which of these is NOT a direct function of assessment? *To evaluate teachers*	44.7	47.7	−0.3
5. What can assessment results be used for? *All of the above (diagnosis, teaching effectiveness, curriculum change)*	87.6	83.7	0.6
6. To help students make progress, which is the best thing to do after assessment? *Let each student know his errors.*	91.2	83.7	1.3
7. Which is the most important function of class tests? *Let students know their strengths and weaknesses.*	81.2	85.0	−0.6
8. To compare a student's score with those of his classmates'. What kind of assessment is this? *Norm-referenced assessment*	23.5	32.0	−1.1
9. Using test scores to decide whether students have reached the expected standard. What kind of assessment is this? *Criterion-referenced assessment*	32.4	31.4	0.1
10. When using assessment to diagnose students' learning difficulties, how difficult should the items be? *Very easy*	46.5	39.9	0.7
Design and use of test items			
11. What is the most important advantage of multiple-choice items? *Marking is objective.*	35.9	37.3	−0.2
12. Which language ability is most suited to multiple-choice items? *Word comprehension*	66.5	52.3	1.6
13. Which language ability is most suited to scrambled sentence? *Reading comprehension*	37.1	34.0	0.4
14. Asking students to write their own answers in reading comprehension. What is the weakness of this testing? *Poor validity*	18.8	30.1	−1.5
15. What is cloze procedure best for assessing? *Reading comprehension*	50.0	32.0	2.0

(continued)

Table 6.5 (continued)

Item	Primary (N = 170) (%)	Secondary (N = 153) (%)	Effect size (Cohen's d)
16. To assess students' written expression, which arrangement yields high validity? *Ask students to write three short essays, each of 100 words.*	51.8	59.5	−0.9
17. Objective items and essay-type questions both have strengths and weaknesses. Which is not a strength of objective items? *Assessing students' ability in organization*	21.2	29.4	−1.1
18. When assessing students' written expression by asking them to write on specified topic, which is the most critical factor? *Students' relevant life experience*	84.1	71.9	1.6
19. When assessing students' written expression by asking them to write on specified topic, how should the topic be? *All of the above (No sex, racial, and socioeconomic biases).*	91.2	93.5	−0.5
20. When assessing students' written expression by asking them to write on specified topic, what is the greatest disadvantage? *Teachers' subjectivity affects marking.*	53.5	57.5	−0.4
Interpretation of test results			
21. For a good multiple-choice item, how many percent of students should answer it correctly? *40–60 %*	46.5	37.3	1.0
22. For a good multiple-choice item, what should be the minimum ratio of percent students answering it correctly and wrongly? *40 % correct*, *60 % wrong*	39.4	39.2	0.0
23. What is the most important quality of options of a multiple-choice item? *Options should not be too different.*	30.0	26.8	0.4
24. A multiple-choice item has about the same proportion of students answering it correctly and wrongly. What does this show? *The item has low discrimination power.*	47.1	43.8	0.4
25. Allowing student to choose topics for writing essay – what is the most serious problem of doing so? *The topics may not be of the same difficulty.*	55.3	62.1	−0.8
26. A student obtained 75 marks for a test. How good is this mark? *Insufficient information, cannot be interpreted*	58.2	43.8	1.6
27. A student obtained 49 marks for a test. The passing mark is 50. The teacher insists that the student has failed the test. What does this mean? *The teacher has no idea of measurement error.*	46.5	45.1	0.2

(continued)

Table 6.5 (continued)

Item	Primary (N = 170) (%)	Secondary (N = 153) (%)	Effect size (Cohen's d)
28. The PSLE uses T-scores for reporting. What kind of scores are T-scores? *Standard scores based on standard deviations*	52.9	30.1	2.6
29. A student obtained a T-score of 60 for an exam. How good was the student? *He was better than 84 % of his classmates.*	50.0	64.1	−1.6
30. A student got a mark of 60 last month and 75 this month for the tests. Has he improved? *Insufficient information, cannot interpret*	58.2	65.4	−0.8
Reliability, *validity*, *and basic statistics*			
31. A teacher assessed her P3 class using a P5 test. What will happen to the test results? *High reliability*, *low validity*	66.5	62.1	0.5
32. Mr. Zhang assessed his P5 class using a P3 test. What will happen to the test results? *High reliability*, *low validity*	33.5	52.3	−2.1
33. Mr. Zhang and Ms. Li marked the same set of homework independently. Each student got very different marks for the same homework. What does this mean? *The marks given by the teachers have low reliability.*	37.1	35.9	0.1
34. Ms. Zhang assessed her students using a test of 20 items. For each student, there was a mark for the first ten items and another one for the last ten items. She intended to check whether the two sets of marks are consistent. What was she checking? *She was checking the reliability of the marks.*	25.9	22.2	0.5
35. The reliability and validity of assessment results are related. What kind of a relation is there? *Low reliability and low validity*	68.2	51.6	1.9
36. Which mark of the following is the mode? {2,2,2,3,3,6,9,13,21} *2*	40.6	36.6	0.5
37. What kind of distribution is formed by the following marks? {2,2,2,3,3,6,9,13,21} *Positively skewed distribution*	27.1	29.4	−0.3
38. When a set of marks form a normal distribution, which is the best central tendency? *All of the above* (*mode*, *median*, *mean*)	20.0	24.8	−0.6
39. A set of marks has a very large standard deviation. What does this indicate? *Students performed very differently.*	44.7	52.4	−0.9
40. Students' achievement and attitude for learning have a correlation of r = 0.5. What does this indicate? *Achievement and learning attitude have 25 % of mutual influence.*	28.2	26.1	0.3

The effect sizes indicate that the primary teachers are more knowledgeable in some aspects such as the suitability of multiple-choice items for assessing word comprehension (Item 12) and the effect of life experience on written expression (Item 18), while the secondary teachers are more knowledgeable in the validity of comprehension testing (Item 14) and assessing ability in organization (Item 17).

Interpretation of Test Results Compared with the two subtests above, the teachers have not done well in Subtest 3. The percentages of correctly answering the questions vary from a low 27 % to a moderate 65 %. Of the ten items in this subtest, only three (Items 25, 29, and 30) have correct percentages greater than 50 % among both primary and secondary teachers. This shows that they are aware of the problem of allowing choices for essay writing, are able to interpret a T-score of 60, and are aware that more information is needed to interpret a change in assessment results. Two other items have around 50 % correct responses in primary teachers only; both items pertain to interpretation of a mark (Item 26) and the nature of T-score (Item 28).

For the remaining five items, the correct response rates vary from 29 % to 47 %. These items pertain to the more technical aspects of item indices, options for multiple-choice items, and measurement error. This indicates that the teachers, both primary and secondary, are generally unfamiliar with the relevant concepts.

The effect sizes indicate that while the primary teachers are more knowledgeable in some aspects, the secondary teachers are more so in some other aspects.

Reliability, Validity, and Basic Statistics The weakest domain of the teachers' assessment literacy is indicated by the low percentages of correct responses for Subtest 4; the percentages vary from as low as 20–68 % but mostly at the lower end.

Only two of the ten items have percentages of 52 % (Item 35) and 68 % (Item 31); both items pertain to the concepts of reliability and validity. Generally, the teachers are weak with items pertaining to basic statistical concepts. These items have percentages varying from 20 % (Item 38, on central tendencies) and 41 % (Item 36, about the mode).

For this subtest, there is no consistent pattern to show the relative strength and weakness of the primary and secondary teachers.

Discussion and Conclusions

The survey reveals several findings that are worthy of note. First, at the whole test and subtest levels, the primary and secondary Chinese language teachers' responses are highly similar. For the Assessment Literacy Scale as a whole, the two groups of teachers were able to answer only 50 % correctly. Using Singapore's convention of 50 % as the cut score, the teachers have just obtained a pass, but this means they know only half of what they need to know about assessment. If a stringent criterion-referenced interpretation of 90 % respondents answering 90 % correctly is used, the

performance is far below the expected 80 %. This finding showed that Chinese Language teachers in Singapore schools may need further training and enhancement in assessment literacy. Similarly, Koh (2011) also found that teachers who taught English, Science, and Mathematics in Singapore should improve their assessment literacy. Taken together, these indicate that Singaporean teachers need to improve their assessment knowledge that enables them to face the new challenges in classroom instruction (Berger 2012).

At the subtest level, the teachers scored 60 % for Subtest 1 (nature and functions), 50 % each for Subtest 2 (designing and use) and for Subtest 3 (interpretation of test results), and 40 % for Subtest 4 (reliability, validity, and basic statistics). Although the four subtests are correlated, the correlations are generally low, indicating a 10 % overlap at most.

Going by the item content, it appears that the teachers are reasonably familiar with assessment concepts and practices which are common-sensical, for instance, the use of assessment results to inform instruction. Such ideas could also have been developed in them through years of teaching experience without specific, formal training. However, when it comes to the more technical aspects of assessment, there leaves much room for desire and is particularly weak in concepts related to score qualities (i.e., reliability and validity) and interpretation involving elementary statistics.

The results of the survey are not unexpected. The poor showing, especially in the more technical aspects, might be attributed mainly to the lack of training in this area. Firstly, one reason is that assessment has been traditionally seen as an appendage to teaching, in a sense of a necessary evil, which if possible will be done away with (Berger 2012). A more practical reason is that the teachers did not have the opportunity to be more adequately trained in assessment; this is witnessed by the 40–60 % of teachers not having studied assessment as an elective course (Table 6.1). They might have been able to learn about some concepts (e.g., using assessment as feedback) through experience on the job and from in-service seminars and workshops (which are rather common in Singapore), but such occasional and accidental exposure would not equip them with the needed in-depth understanding of technical concepts and procedures such as item indices and checking reliability and validity, let alone statistical concepts and skills; all of these require specific training and practice to attain a professional-level knowledge.

Obviously, there is a deficit in the Chinese Language teachers' training in assessment literacy, and it is gratifying that no less than three quarters of them realized their professional need for formal training in educational measurement and testing (Table 6.1). This leads to the question of how this can be achieved.

In Singapore, the two large-scale high-stake examinations are the *Primary School Leaving Examination* taken by Primary 6 students and the *General Certificate of Education "O"- Level Examination* taken by Secondary 4 students. These are high-stake examinations at the national level in the sense that the results are used for making very important educational path decisions for students. Chinese Language

is one of the subjects in the two national-level examinations. For Chinese Language teachers, assessment is *assessment for learning* which helps improve teachers' instruction and students' learning (Gipps 1994; Stiggins 2002), although assessment may still be perceived as part of teaching and learning in the traditional sense (Fulcher 2012; Malone 2008). This has implications for planning training for the Chinese Language teachers.

Specifically, Chinese Language teachers need to have two aspects of knowledge and skills of assessment. Firstly, they need to understand and know how to interpret results of the two national examinations and be able to relate these to the school-based examinations in both substantive and statistical senses. Next, they need, more importantly, to be able to craft effective test items and questions, to item-analyze the students' responses for improving item writing and questions setting skills, and, a more conceptually challenging level, to apply statistical concepts and techniques to verify the reliability and validity of the assessment results obtained through their own classroom tests.

The kind of assessment-related knowledge and skills listed above and their likes fall neatly into the domains covered by the four subtests. They are the essentials of educational measurement and testing underlying the concepts and skills Chinese language teachers will need, if they are to (1) understand the relationships between assessment and teaching; (2) competently design test items and set questions that will provide information useful for teaching; (3) interpret the results of assessment using their own assessment procedures; and (3) look inside the test scores to evaluate the technical qualities with the use of basic statistical concepts.

As for the modes of delivery of the knowledge and skills, there are the traditional lecture-cum-discussion and practice-oriented workshops. However, in view of the large number of Chinese Language teachers who need the training, it is also viable to combine e-learning through a portal, self-study worksheets, followed by periodical tutorials and seminars – a form of flipped or blended teaching. This allows as many teachers to be reached in as short a time available, and the deficit in assessment literacy among Singapore's Chinese Language teachers can be averted in as short a time as possible.

The findings of the present survey pertain specifically to Chinese Language teachers in Singapore. As they have gone through similar professional training systems common to teachers of other subjects, surveys might reveal the same tendencies and indicate similar training needs of Singapore teachers in general.

In terms of teacher training in assessment literacy, Kunnan and Zhang (2015) proposed a three-step approach including creating awareness, providing training, and requiring responsibilities. Specifically, creating awareness means that it is important for the teachers to be aware of the process of assessment development as well as the modern approaches to assessment validation; providing training indicates that teachers should be given training in assessment literacy systematically, and requiring responsibilities, as a post-training phase, refers to teachers' continuous practice and application of assessment principles and knowledge in their teach-

ing. The present writers are of the view that although initially meant for EFL/ESL teachers, the three-step approach is also appropriate for assessment literacy training for Chinese Language teachers in Singapore. In other words, Chinese Language teachers should be aware of the importance of being assessment literate, be given organized and systematic training in assessment and apply the assessment knowledge they gain from training into their teaching practice. That way, teachers might be able to take the assessment responsibilities placed upon them more competently and successfully (Fulcher 2012).

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Appendix: Methodological Notes on Reliability and Validity

A report of this survey is incomplete without a discussion on two key concepts of measurement, reliability, and validity.

The conventional method of assessing score reliability is the Cronbach's alpha coefficient which indicates the degree of internal consistency among the items, with the assumption that the items are homogeneous and the sample is heterogeneous. The 40 items of the Assessment Literacy Scale crafted for this study are scored 1 (right) or 0 (wrong).

Richardson Formula 20 (KR20), which is an equivalent of Cronbach's alpha but for dichotomous items, was used.

Table 6.6 below shows the KR20 reliabilities for the four subscales and the scale as a whole. It is clear that the KR20 reliabilities are disappointingly low by the conventional expectation and this may lead to the question of trustworthiness of the survey results.

However, there have been criticisms, among others, on Cronbach's alpha as a measure of item homogeneity or unidimensionality. For example, Sijtsma (2009: para. 4.2) commented:

> There is no clear and unambiguous relationship between alpha and the internal structure of a test. This can be demonstrated in a simple way. First, it is shown that a 1-factor test may have any alpha value. Thus, it may be concluded that the value of alpha says very little if anything about unidimensionality. Second, it is shown that different tests of varying factorial composition may have the same alpha value. Thus, it may be concluded that alpha says very little if anything about multiple-factor item structures.

One factor leading to the low reliabilities as shown in Table 6.6 is the heterogeneous nature of item content among the 40 items of the Assessment Literacy Scale as they cover many different aspects of educational measurement, some qualitative and other quantitative in nature, even within a particular subtest. This being the

Table 6.6 KR20 reliabilities

Measure	Primary	Secondary
1. Nature and functions of assessment	.28	.37
2. Design and use of test items	.34	.38
3. Interpretation of test results	.36	.18
4. Reliability, validity, and basic statistics	.36	.40
5. Whole test	.34	.58

Table 6.7 Relative alpha coefficients

Measure	Primary	Secondary
1. Nature and functions of assessment	.98	.97
2. Design and use of test items	.95	.95
3. Interpretation of test results	.94	.93
4. Reliability, validity, and basic statistics	.95	.95
5. Whole test	.97	.97

case, it renders the conventional reliability measures (i.e., Cronbach's alpha and its equivalent KR20) which assume item homogeneity unsuitable for the purpose of the present study. Thus, the KR20 reliabilities routinely calculated and presented in Table 6.6 are not to be taken seriously.

Another factor contributing to low-score reliability is group homogeneity. Pike and Hudson (No date: para. 1) discussed the limitation of using Cronbach's alpha to estimate reliability when using a sample with homogeneous responses in the measured construct and described the risk of falsely concluding that a new instrument may have poor reliability and demonstrates the use of an alternate statistic that may serve as a cushion against such errors. The authors recommended the calculation of the relative alpha by considering the ratio between the standard error of measurement (SEM) which itself involves the reliability as shown in the formula; thus,

$$\text{SEM} = \text{SD} * \text{SQRT}(1 - \text{reliability})$$

The relative alpha which can take a value between 0.0 and 1.0 indicates the extent to which the scores can be trusted, in a sense, an alternative way to evaluate score reliability. The formula is

$$\text{Relative Alpha} = 1 - \text{SEM}^2 / (\text{Range} / 6)^2$$

In this formula, SEM is the usual indicator of the lack of trustworthiness of the obtained scores and, under normal circumstances, the scores for a scale will

theoretically span over six standard deviations. Thus, the second term on the right is an indication of the proportion of the test variance that is unreliable. With these, relative alpha indicates the proportion of test variance offset for its unreliable portion, i.e., the proportion of test variance which can be trusted.

In the present study, the maximum possible score for the Assessment Literacy Scale is 40 and the theoretically possible standard deviation is 6.67 = 40/6. However, the actual data yields for the Scale as a whole standard deviations of 4.24 (primary) and 4.66 (secondary), which are 0.64 and 0.70, respectively, of the theoretical standard deviations. In other words, the two groups are found to be more homogeneous than expected.

Table 6.7 shows the relative alphas for the primary and secondary groups of Chinese Language teachers surveyed here. The statistics suggest that much of the test variance has been captured by the 40-item Assessment Literacy Scale and the scores can therefore be trusted.

As for validity, it required information beyond the test scores. Ideally, the criterion scores for validity can come from a test of application of measurement concepts and techniques, but such information is not available within the survey results, although some of the 40 items of the Assessment Literacy Scale are of this type, for instance, those items on statistical concepts. However, indirect evidence of the score validity is provided by the teachers' responses to the open-ended question asking for comments and suggestions with regard to educational assessment.

For the open-ended question, the primary Chinese teachers made 14 responses and the secondary teachers 22, totally 36 responses. Most of the responses (primary 7 and secondary 12) reflect the teachers' realization that assessment plays an important role in their teaching for which specialized knowledge is needed. Examples of such responses are shown below:

What is taught and what is assessed should be consistent.
Teachers need to have knowledge of educational measurement.
Need to popularize knowledge of assessment among the school leaders.
Hope to gain knowledge of educational measurement so that I can assess with in-depth understanding.
Without knowledge of educational measurement, data analysis of results conducted in the school is superficial.
Very much needed!
Will help improving teaching.

A second type of responses reflect the difficulty the teachers had in understanding items which involve technical concepts and terminologies (primary 4, secondary 7). Such responses are expected in view of the lack of more formal and intensive training in educational assessment. Examples of such responses are shown below:

Not familiar with the technical terms.
Too many technical, I don't understand.

I don't understand some of the questions.
Many mathematical terms; I don't understand.

The third type of responses reflect the need of the teachers to be convinced that assessment training is necessary for them to use assessment results properly as part of instruction (primary 3, secondary 3). Examples of such responses are shown below:

Can assessment really raise the students' achievement and attitude? Will it add on the teachers' work? Really helpful to the students?
Does data help in formative assessment?

The responses reaffirm the test-taking attitude of the teachers when responding to the Assessment Literacy Scale. The seriousness with which they completed the survey is clearly evident. The second type of responses corroborates with the finding that they lack relevant specific training in educational assessment and hence found the technical terms and concepts unfamiliar; this truly reflects their position and lack of knowledge. The third type of responses indicates the reservation and inquisitiveness of some of the respondents; this indirectly reflects that they need to be convinced that they need more training in educational measurement.

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Chapter 7
Familiarity and Use of Language Teaching Strategies among Chinese Language Teachers

Kaycheng Soh

There is no denial that Chinese language is one of the most difficult languages to learn. The Foreign Service Institute of the United States classifies Chinese (Mandarin and Cantonese), together with Arabic, Japanese, and Korean, as Category V: language which are exceptionally difficult for *native English speakers* which requires 88 weeks (2200 h) of learning to attain the competence of Speaking 3: General Professional Proficiency in Speaking and Reading 3: General Professional Proficiency in Reading. This is in stark contrast with Category I which requires only 23–24 weeks (575–600 h) to attain the same level as that in European languages such as Danish, Dutch, French, and Italian (Effective Language Learning 2013). Thus, in terms of time required to reach the same level, Chinese demands about four times as much as most European languages. Note that this is for motivated adult learners. What more for schoolchildren who are required to but may and may not be motivated to learn Chinese?

Nonetheless, there seems to be no systematic empirical studies documenting specifically what makes Chinese language difficult, although there are many web-based commentaries of personal views and experiences on the problem. For example, Moser (2010), of the University of Michigan Center for Chinese Studies, lists nine reasons, including the different writing system as compared with alphabetic systems, difficulty in using the dictionary because of its complicated referencing system, and the language being tonal, *inter alia.* In response, Lewis (2014) commented that Moser based his speculation on only English and no other languages. Lewis also suggested that the difficulty in writing Chinese can be overcome by using the modern technology with the use of Hanyu Pinyin. And, for the need to remember a very large number of Chinese characters, Lewis suggested the use of memory mnemonics (actually, a language learning strategy) to create associations and thereby reduce memory load.

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A more balanced view is presented by Wagner (2014), Programme Editor for Dictionaries at the Oxford University Press. Wagner is of the view that learning Chinese is just like learning other languages where difficulty is concerned, at least for adult learners. Although there are more than 80,000 Chinese characters, only 3500 of these are in Standard Chinese, and 1000 of the most frequently used will enable reading of almost 90 % of publications in modern Chinese. As for the difficulty caused by the tone variations in Chinese, the problem arises from transferring uses in English to Chinese (e.g., raising English intonation at the end of a question) and paying attention to context should help (e.g., 我要水饺 *I want dumplings* compared with 我要睡觉 *I want to sleep*). And, it is said that the best part of learning Chinese lies with its grammar which is straightforward and similar to English in most cases but with no irregular verbs, no noun plurals, no gendered parts of speech, and no noun–verb agreement to remember. Similar views and recommendations are made by Bullock (2014).

In an undated commentary, Flynn (No date) pointed out that how hard a language is to learn only arises in the area of second languages and the difficulty is a function of the degree of difference between the first and second languages. For example, a native speaker of Spanish will find Portuguese, a closely related language, much easier to learn than a native speaker of, say, Chinese. The author further stresses the importance of motivation in that if people learn a language they need to use, they often learn it faster than people studying a language that has no direct use in their lives. Moreover, the writing system is not the only factor contributing to learning difficulty. Flynn cites a study by the British Foreign Office which found Hungarian (not Chinese !) most difficult to British diplomats because of its complex grammar, for instance, the 35 forms of a noun according to the contexts it is used.

In short, while Chinese language may need more time than many other languages to learn to a specific level of attainment, it is not necessarily the most difficult one, considering that there are many aspects of the linguistic and environmental factors that make it easy or difficult. However, it is of note that the cited commentaries have adult learners as the focus and the ideas thereof may and may not apply to young students in school, as research has shown that children and adults do not learn language in the same way (e.g., Cook 1995).

Linguists make a difference between language *acquisition* in natural home environment and language *learning* in contrived classroom situations (Krashen 1981). Where Chinese language students are concerned, those who grow up in an environment in which they are constantly exposed to the language *acquire* (in Krashen's sense) it as a *first language* (in the linguistic and *not* administrative sense as the terms are used in the Singapore context) are exposed to it practically all the time, so much so that they cannot help acquiring it. These students acquire the language as part of their daily living without the need for special teaching. In contrast, students who do not grow up in *that kind of* environment *learn* Chinese as a *second language* (although it may be their heritage language) need special help to compensate for the lack of constant and inescapable exposure to the language. In this regard, language learning strategies (LLS) may provide part of the answer to the question of how to learn a second or heritage language

effectively and efficiently. In view of the trend of increasing proportion of Singapore's schoolchildren who do not speak Chinese (Mandarin) at home, the use of LLS to help them learn Chinese more effectively is of no small significance.

Language Learning Strategies and Proficiency

LLS are defined as specific actions, behaviors, steps, or techniques student use, often consciously, to improve their progress in apprehending, internalizing, and using the second language (Oxford 1990). LLS are also later more concisely defined as "specific behaviors or thought processes that students use to enhance their own L2 learning" (Oxford 2003: 8). Thus, LLS are tools for active self-directed and goal-oriented involvement for developing second-language ability, for instance, forming conversation patterns, labeling word groups, using gesture to communicate, breaking words down to their components, guessing word meanings when reading, etc. Effective second-language learners are found to consciously use LLS by which they motivate, manage, and monitor their own learning. They are able to describe the LLS they use and even explain the reasons for using them.

Strategy training or learner training is the effort to teach students in using LLS and such efforts have largely been found rewarding (Thompson and Rubin 1993), although not always so. Based on the success of LLS training, Oxford (No date) derived the following 10 principles of enhancing student learning:

1. Strategy training should be based clearly on students' attitudes, beliefs, and stated needs.
2. Strategies should be chosen so that they mesh with and support each other and so that they fit the requirements of the language task, the learners' goals, and the learners' style of learning.
3. Training should, if possible, be integrated into regular L2 activities over a long period of time rather than taught as a separate, short intervention.
4. Students should have plenty of opportunities for strategy training during language classes.
5. Strategy training should include explanations, handouts, activities, brainstorming, and materials for reference and home study.
6. Affective issues such as anxiety, motivation, beliefs, and interests – all of which influence strategy choice – should be directly addressed by strategy training.
7. Strategy training should be explicit, overt, and relevant and should provide plenty of practice with varied tasks involving authentic materials.
8. Strategy training should not be solely tied to the class at hand; it should provide strategies that are transferable to future language tasks beyond a given class.
9. Strategy training should be somewhat individualized, as different students prefer or need certain strategies for particular tasks.
10. Strategy training should provide students with a mechanism to evaluate their own progress and to evaluate the success of the training and the value of the strategies in multiple tasks.

These principles are of relevance to the teaching of Chinese learned as a "second language," considering the language background of the majority of students learning the language in the Singapore context. These principles stress the need to be explicit, integrative, and sustaining in training students in LLS and to ensure they are functionally engaged as part of the learning process. In short, teachers should not only teach students to learn the language but also teach them *how to learn it*. This implies that over and above the conventional notion of teaching four language skills ("skills/knowledge") in Chinese lessons, teachers need to teach students a *fifth language skill*, that is, LLS.

Summarizing earlier studies by various researchers, Oxford (2003: 10) concluded that more successful second-language learners have been found to use LLS more systematically with goal-directedness while, in contrast, less successful ones used them in a random, unconnected, and uncontrolled manner. Successful second-language learners were also found to be more able to reflect on and articulate their own language learning process. Moreover, explicit LLS instruction has been found to result in better learning outcomes for speaking and reading among ESL/EFL students.

LLS vary in nature: cognitive (e.g., translating, analyzing), metacognitive (e.g., planning, organizing), or social–affective (e.g., paying attention to social relationships and own feelings). Oxford (1990) summarized a host of factors associated with the use of LLS. Such factors include motivation, gender, cultural background, attitudes and beliefs, types of task, age, learning styles, and tolerance for ambiguity. There have been several schemes classifying LLS before Oxford's (1990) synthesis. She first organized LLS into two broad groups and then six subgroups. In her classification, *direct strategies* include memory strategies, cognitive strategies, and compensation strategies and *indirect strategies* include metacognitive strategies, affective strategies, and social strategies. Table 7.1 shows details of the strategies classified by Oxford.

Obviously, these strategies do not come by naturally to the second-language students, and they have to be explicitly trained, reminded to use, and guided in using them, with the aim of automaticity in language learning situations in and out of the language classroom. In other words, the students need be shown the LLS and encouraged to use them for effective language learning.

Understandably, most studies on LSS deal with the learning of English as a second language. Studies conducted in China, Taiwan, and the United States involved Chinese learners of English or non-Chinese learning Chinese language. There are rather few studies on the learning of Chinese as a second language by Chinese students, perhaps because there is no such need and doing it sound self-contradictory since Chinese students are supposed to learn it as a first language.

It appears that the study by Chien (2010) is a rare exception to this situation. The study conducted in Hong Kong where normally Chinese texts are taught in Cantonese (a Chinese *dialect*) focused on students learning to speak and read in Putonghua (Mandarin Chinese). The study involved 12-year-old Form 1 students from three secondary schools. *Strategies Inventory for Language Learning* (SILL; Oxford 1990) was translated into Chinese for collecting data. Of the 14 most

Table 7.1 Language learning strategies

Strategies	Sub-strategies	Specific strategies
Direct strategies	Memory strategies	Creating mental linkages
	Used by students to help them remember new language items	Applying images and sounds
		Reviewing well
		Employing action
	Cognitive strategies	Practicing
	Used to help students think about and understand new language	Receiving and sending messages
		Analyzing and reasoning
		Creating structure for input and output
	Compensation strategies	Guessing intelligently
	Used by students to help them compensate for lack of knowledge	Overcoming limitations in speaking and writing
Indirect strategies	Metacognitive strategies	Centering learning
	Use by students to think about their thinking process when learning new language	Arranging and planning learning
		Evaluating learning
	Affective strategies	Lowering anxiety
	Used to relate how students feel about the new language	Encouraging self
		Taking emotional temperature
	Social strategies	Asking questions
	Use by students which involve interaction with other people	Cooperating with others
		Empathizing with others

Source: Oxford (1990), cited in Chien (2010)

frequently used LLS, there are four metacognitive strategies, three affective strategies, three compensation strategies, two social strategies, one memory strategy, and one cognitive strategy.

In Singapore, Loh (2007) studied the use of LLS to learn Chinese by Primary 6 students in one school. Using an adapted version of Oxford's *Strategies Inventory for Language Learning*, the author compared the use of LLS to learn English and Chinese among the young students and observed that there were differences in LLS use between the languages. In a very real sense, these students were learning concurrently the two languages as second languages! It was found that LLS use depended heavily on teachers' instruction and not on individual student's ability and motivation. This underlines the important role of language teachers in training their students in LLS. Moreover, differences in the two language syllabuses had an influence on LLS use. This suggests that LLS need be specifically built into second-language syllabuses to ensure their use in language lessons as the *fifth* language skill.

Later, also in Singapore, Yeo (2011) reported a study on the use of LLS to learn Chinese and English of Secondary 1 students in two Special Assistance Plan Schools in Singapore; by the way, these schools admitted students who have done extremely well in the high-stake Primary School Leaving Examination and fell within the top 10 % of the cohort. The author interviewed 12 students, six who had Chinese as their home language and, in contrast, six had English as their home language. The author argued that the home language background of students (English language) could make learning of Chinese difficult and that LLS could be a contributing factor for overcoming the problems and thereby leading to better achievement. Specifically, it was found that most students used memory strategies of *placing new words into a context* and *using Hanyu Pinyin in memory*. This was attributed to the availability of dictionaries and vocabulary handbooks. It was also observed that the teachers might have a role to play in teaching the LLS.

In a later conference paper, Yeo et al. (2012) argued for a case to integrate LLS into the teaching of Chinese to students who have difficulty in their learning (the so-called Chinese Language B students) for whom the program emphasized the development of oral skills explicitly much more than reading and writing. It was argued that by using LLS, such students should be able to learn Chinese with greater ease and effectiveness and thereby develop their communication skills.

More recently, in the United Kingdom, Hu (2013) surveyed Chinese Language teachers and non-degree students in Sheffield on LLS use in the teaching and learning of the language. It was found that, in general, neither the teachers nor the students were consciously aware of LLS, although its use had been stressed in curriculum, language teaching and learning research literature. The author therefore suggests training in LLS for both teachers and students.

Teaching of LLS

The need for students to learn LLS implies that, in the first place, the language teachers need be familiar with the LLS, consciously and routinely use them in language lessons where specific LLS are relevant, and then go further to train and guide the students to do the same such that the LLS become second nature to them.

That this is so can be understood from a social psychological perspective, as the language classroom is an arena for intensive and purposeful social interaction between the teacher and her students. In the social context, the teacher and her students play complementary roles: when the teacher talks, the students need to listen, and when the teacher asks questions, the students need to answer them, etc. The teacher and her students can switch roles and the students can learn to talk and ask questions. In the same manner, the teachers can first demonstrate specific LLS for her students to emulate later, and by doing this, students are guided to build up their own LLS repertoire. For example, in the teaching of Chinese characters which are made up of two or more parts, the teacher may use the components approach (部件教学) and analyze the components and structure of Chinese characters

students are to learn. In fact, the estimate is that more than 85 % of Chinese characters are of this type. This approach is a strategy which the students can adopt so that they can use it subsequently when trying to learn some Chinese characters new to them. Asking for word meanings in English when learning Chinese (i.e., the bilingual approach) is another strategy.

In short, LLS need be demonstrated in the reality of Chinese Language classroom as a routinized part of teaching since students can benefit from learning the *fifth* language skill. To be able to do this, the Chinese Language teachers themselves need be familiar with the LLS and use them often enough in the lessons they teach. In doing so, LLS are transformed into language teaching strategies.

Objectives

It is not known to what extent the Chinese Language teachers in Singapore schools are familiar with the host of LLS such as those listed by Oxford (1990). It is also not known how often the Chinese Language teachers have used those which they are familiar with. The present survey, therefore, intends mainly to find answers to these two questions, the answers to which can be useful for planning training programmes to equip Chinese Language teachers with the capability of using as well as teaching them. Therefore, in the context of teaching Chinese Language, the present study attempts to find answers to the following questions:

1. How familiar are teachers about LLS?
2. How often have the teachers used the LLS?
3. Which of the LLS have the teachers found effective?
4. Are there other strategies the teachers used and found effective?
5. What tasks do the teachers see as most difficult for their students?

Method

Respondents

The respondents were Chinese Language teachers who attended professional training courses during the November end-year vacation 2014 at the Singapore Centre for Chinese Language.

As shown in Table 7.2, a total of 202 teachers (57 % Primary and 43 % Secondary) took part in the survey. Of both the Primary and Secondary groups, there is a female preponderance; this is a reflection of the population of Chinese language teachers in Singapore schools, although the proportions may not be exactly those of the

Table 7.2 The respondents' personal information

		Primary (N = 115) %	Secondary (N = 87) %
Gender	Male	13	15
	Female	87	85
Teaching experience	Mean years (SD)	10.4 (9.0)	6.9 (6.2)
Level of teaching	Primary 1–3	25	–
	Primary 4–6	75	–
	Secondary 1–2	–	39
	Secondary 3–4 or preuniversity	–	61
Nationality	Singapore citizens	72	70
	Permanent residents	24	13
	Chinese national	2	14
	Others	2	3
Professional training	Completed in Singapore	88	80
	Completed outside Singapore	12	20
	Yet to be completed	–	–

population. The Primary teachers have a longer year of teaching experience with a mean of 10.4 years (SD 9.0 years) when compared with the Secondary teachers with a mean of 6.9 years (SD 6.2 years).

In 2014, three-quarters of the Primary teachers taught mainly upper primary classes, whereas two-thirds of the Secondary teachers taught upper secondary or pre-university classes. Of the two groups, around 70 % were Singapore citizens. Besides, there are more permanent residents among the Primary group but more Chinese nationals among the Secondary group. All teachers completed their professional training and most of them did so in Singapore, more among the Primary teachers.

Questionnaire

The questionnaire lists 55 LLS adapted from Hsu (2012) who compiled the strategies with reference to Oxford (1990) and Schmitt (2000) for a master's thesis in Taiwan involving Chinese students learning English as a second language. There are memory strategies, cognitive strategies, social strategies, metacognitive strategy, and determination strategies (see Appendix for the list of LLS). When adapting the items for use in the present study, they were rephrased in the context of *teaching* in place of learning and presented in Chinese. An example of the rephrasing is shown below:

> Original student version: *I think of relationships between what I already know and new things I learn in Chinese*.
>
> Adapted teacher version: 指出当前要学的字词和以前学过的字词之间的关系。*Point out the relationships between what is already learned and new words to be learned.*

For each LLS, the respondent was requested to indicate familiarity (or the lack of it) by choosing *Yes* or *No*. If familiar, the respondent was to indicate frequency of using the LLS by endorsing 0 = *Never*, 1 = *Occasionally*, 2 = *Frequently*, or 3 = *Regularly*. In addition to these closed-ended questions, the respondents were also asked to indicate which of those they have used to be *the most helpful to the students.* This is followed by a request to describe any other strategies they have used and found effective. And the respondents were also invited to indicate the students' most difficult tasks in learning Chinese language as they have observed. The questionnaire ends with questions asking for personal information related to gender, teaching experience, nationality, and professional preparation. The questionnaire was administered at the beginning of the training course with a time limit of 20 min.

Analysis

Percentages were calculated for responses to questions on familiarity, uses, perceived effectiveness for the teaching strategies, and perceived student difficulties. While the percentage for familiarity was based on the total number of teachers in a group, the percentage for strategy use was based on the number of teachers in each group *who indicated familiarity with the LLS*. The differences between the Primary and Secondary teachers were evaluated via the chi-square test of association and a *p*-value of 0.05 was adopted in general (Preacher, 2001).

Results

Familiarity and Use

To evaluate familiarity and use, endorsement of 75 % was adopted as the cutoff. For the 202 respondents, the standard error of percentage is 0.21 %, and this allows for a rather small sampling error (fluctuation) such that the percentages can be trusted as reliable. A LLS which has obtained 75 % endorsement of *Yes* for familiarity was therefore taken to be of high familiarity, otherwise low familiarity. Likewise, a LLS which has 75 % endorsement of *Frequently* and *Regularly* combined was considered as of high use, otherwise low use. With the two criteria combined, each LSS was classified as falling into one of the following four categories:

1. HFHU: High familiarity, high use
2. HFLU: High familiarity, low use
3. LFHU: Low familiarity, high use
4. LFLU: Low familiarity, low use

As shown in Table 7.3 for Primary teachers, 75 % of the listed LLS met the criterion of familiarity, but for Secondary teachers, only 56 % of the LLS did. The chi-square's *p*-value of .071 indicates that the two groups did not differ in familiarity

Table 7.3 Familiarity and use of Primary and Secondary teachers

	Familiarity		Use	
	Primary	Secondary	Primary	Secondary
75 % or more	41 (75 %)	31 (56 %)	19 (35 %)	8 (15 %)
Below 75 %	14 (25 %)	24 (44 %)	36 (65 %)	47 (85 %)
Chi-square test	Yate's chi-square = 3.257 d.f. 1, $p = .071$		Yate's chi-square = 4.909 d.f. 1, $p = .027$	

when $p < .05$ is adopted as the criterion. At the same time, for Primary teachers, 35 % of the LLS met the criterion of Use, and for Secondary teachers, it is 15 %. The chi-square's p-value of .027 indicates that the two groups differed with statistical significance.

When the two groups were pooled, 63 % of the LLS met the criterion for familiarity but only 25 % did for use. This indicates that the teachers as a whole were familiar with two-thirds of the 55 listed LSS but they used only one-quarter of them frequently or regularly.

Strategy Types

It is also useful to see the familiarity and use of the 55 LLS in terms of strategy types. The patterns for Primary and Secondary teachers are shown in Table 7.4. As can be seen therein, generally, Primary teachers have more items in the high familiarity, high use category (31 %), and Secondary teachers have more items in the low familiarity, low use category (42 %), although the two groups are equal for high familiarity, low use items.

Of the five strategy types, Primary teachers have *higher* percentages for memory, metacognitive, and determination strategies, and Secondary teachers have *higher* percentages for metacognitive, determination, and social strategies. For the four strategy categories, the chi-square's p-value of 0.015 indicates that there is statistically significant group difference between Primary and Secondary teachers.

Perceived Effectiveness

The teachers were requested to indicate which of the 55 LLS they found effective for their students. The percentages were calculated using the numbers of mention as the base and the LLS were classified into four categories. Table 7.5 shows their responses in terms of categories and items. As shown in the last column of Table 7.5, of the 55 listed LLS, the teachers considered only four of moderate or high effectiveness, whereas the rest were considered as only of some effectiveness or even not at all. It is not known whether this pattern of response is based on actual experience or mere speculation, since the teachers showed low rate of LLS use.

Table 7.4 Patterns of familiarity and use by strategy types

	High familiarity, high use	High familiarity, low use	Low familiarity, high use	Low familiarity, low use
Primary				
Memory strategies (25)	9 (36)	13 (52)	0 (0)	3 (12)
Cognitive strategies (13)	3 (23)	3 (23)	1 (8)	6 (46)
Social strategies (6)	1 (17)	3 (50)	0 (0)	2 (33)
Metacognitive strategies (7)	2 (29)	4 (57)	0 (0)	1 (14)
Determination strategies (4)	2 (50)	1 (25)	0 (0)	1 (25)
Total	**17 (31 %)**	**24 (44 %)**	**1 (2 %)**	**3 (5 %)**
Secondary				
Memory strategies (25)	1 (4)	12 (48)	0 (0)	12 (48)
Cognitive strategies (13)	1 (8)	6 (46)	0 (0)	6 (46)
Social strategies (6)	1 (17)	3 (50)	0 (0)	2 (33)
Metacognitive strategies (7)	4 (57)	2 (29)	0 (0)	1 (14)
Determination strategies (4)	1 (25)	1 (25)	0 (0)	2 (50)
Total	**8 (15 %)**	**24 (44 %)**	**0 (0 %)**	**23 (42 %)**
Chi-square test	Yate's chi-square = 5.939 d.f. 1 $p = 0.015$			

Notes: Figures in parentheses are percentages of numbers of items in each strategy

Table 7.5 Perceived effectiveness

% of mentions	Primary (N = 161)	Secondary (N = 73)	Combined (N = 234)
0 Noneffective	**5, 7, 13, 14, 15, 16, 20, 22, 24, 27, 29, 33**, 36, **37, 40, 41, 43, 44, 50** [**17**/19 items]	1, 2, **5, 7**, 8, 10, 12, **13, 14, 15, 16**, 18, **20**, 21, **22**, 23, **24**, 25, **27**, 28, **29**, 30, **33**, 35, 36, **37, 40, 41, 43, 44**, 46, **50**, 52 [**17**/33 items]	1, 2, 5, 7, 8, 10, 13, 14, 15, 16, 18, 20, 21, 22, 24, 27, 28, 29, 30, 33, 35, 36, 37, 40, 41, 43, 44, 50 [28 items]
1–5 Some effectiveness	1, 2, **3**, 4, **6**, 8, 10, **11**, 12, **17**, 18, **19**, 21, 23, 25, **26**, 28, 30, 31, **32, 34**, 35, **38, 42**, 46, **47, 48, 49, 51**, 52, **53, 54, 55** [**18**/33 items]	**3**, 4, **6, 11, 17, 19, 26, 32, 34**, **38, 42**, **47, 48, 49, 51, 53, 54, 55** [**18**/18 items]	3, 4, 6, 11, 12, 17, 19, 23, 25, 26, 32, 34, 38, 42, 46, 47, 48, 49, 51, 52, 53, 54, 55 [23 items]
6–10 Moderately effective	**39** (8 %) [1 item]	31 (8 %), **39** (8 %) [**1**/2 items]	31 (6 %), 39 (8 %) [2 items]
11 and above Highly effective	**9** (15 %), **45** (11 %) [**2**/2 items]	**9** (16 %), **45** (12 %) [**2**/2 items]	9 (15 %), 45 (11 %) [2 items]
Chi-square test	Yate's chi-square = 6.164 d.f. 1 $p = 0.013$		

Note: (1) Numbers in bold show items shared by Primary and Secondary teachers. (2) For chi-square calculation, the three higher effectiveness categories were combined and then compared with noneffective category to ensure sufficient cell frequencies for the former

At the same time, Primary teachers found 33 items of some effectiveness and Secondary teachers found only 18 items of some effectiveness. The two groups of teachers shared 18 such LLS. Moreover, there are three items which Primary teachers found moderately or highly effective and also four such items for Secondary teachers. The two groups shared three such items. The chi-square *p*-value of 0.013 confirms that the two groups have statistically significant different views of effectiveness.

When the responses of Primary and Secondary teachers were pooled, there are 28 items in the noneffective category, 23 items of some effectiveness, and four items of moderate or high effectiveness. The four LLS of moderate or high effectiveness are these:

1. Memory strategy: Link new words with the students' life experiences.
2. Cognitive strategy: Ask students to take notes during lessons.
3. Social strategy: Ask students the English equivalents of new words.
4. Metacognitive strategy: Use Chinese songs, films, and news in lessons.

Additional Strategies

The teachers were also requested to name strategies they used and found effective but not in the list of 55 LLS. Primary teachers made 19 responses. Of these, six have to do with dramatization or role-play, three have to do with ICT, two mention mind-mapping, and two reported group activities. The remaining six are single miscellaneous responses. Secondary teachers made 18 responses. Of these, four have to do with games, three have to do with ICT, three mention application activities, and two are about dictation. The remaining six are single miscellaneous responses.

With these limited responses and the nature of the "other strategies," it may be safe to conclude that the 55 LLS used in the survey questionnaire are reasonably exhaustive.

Students' Learning Difficulties

Teachers were asked to name their students' learning difficulties which were found most challenging. Primary teachers made 79 written responses and Secondary teachers 51. The written responses were classified into nine categories as shown in Table 7.6, with sample responses.

As Table 7.6 shows, according to Primary teachers' responses, memory is the most severe problem because students could not remember what they have learned. Next in difficulty is written expression in terms of sentence structures and choice of words. The third most severe difficulty lies with the writing of Chinese characters and linking between words and word meanings. Interestingly, there is no mention

Table 7.6 Students' learning difficulties

	Sample response	Primary (N = 79)	Secondary (N = 51)	Total (N = 130)
Speaking	*Seldom have Mandarin conversation. Students have no Mandarin-speaking environment*	3 (9)	0 (9)	2 (9)
Reading	*Seldom read in Chinese. Difficulty in reading comprehension. Little reading of Chinese outside the class*	6 (8)	6 (6)	6 (8)
Vocabulary	*Limited vocabulary. Attend to pronunciations and not meanings. Mixing up characters that look alike. Word recognition and understanding of meanings*	11 (5)	24 (2)	16 (2)
Memory	*High forgetting rate. Forgetting words they have learned. Difficulty in remembering low-frequency characters*	22 (1)	31 (1)	25 (1)
Writing	*Serious problem of wrong strokes. Difficulty in linking pronunciations with characters. Difficulty in reconstruction of sentences from scrambled words. Do not understand the structure of Chinese characters*	14 (3)	4 (8)	10 (5)
Written expression	*Difficulty in writing complete sentences. Grammatical errors. Difficulty in using words correctly and wring correct sentences*	15 (2)	8 (5)	12 (3)
Application	*No chance to apply what they have learned. No environment to apply. Low frequency of using*	8 (7)	12 (3)	9 (6)
Background	*Mixing up Chinese and English. Foreign students. Lack cultural background and find related texts difficult*	9 (6)	4 (8)	7 (7)
Attitude	*Lack of interest. Lack of confidence. Learn for examination and lose interest. Do not value Chinese language; not required for university admission*	13 (4)	12 (3)	12 (3)

Note: (1) Figures in parentheses are rank orders. (2) Spearman's rank difference correlation between Primary and Secondary is $\rho = 0.52$

of difficulty with listening, suggesting that this is not a problem at all among the primary students.

As seen by Secondary teachers, memory is also the most severe problem. This is followed by difficulty in vocabulary (this is ranked fifth by Primary teachers). In the third place of difficulty are application (which is ranked seventh by Primary teachers) and student attitude.

When the responses of Primary and Secondary teachers were pooled, the three most severe difficulties are memory, vocabulary, and written expression. Note that the Spearman's rank difference correlation between the two groups' responses is

only a moderate 0.52. This indicates that Primary and Secondary teachers tend to face different difficulties in their teaching. This could well be due to the different expectations for and learning needs of students at the Primary and Secondary levels.

Conclusion and Recommendations

Before a discussion on the implications of the findings, the survey results are summarized as follows:

1. Generally, the Chinese language teachers are (or so they claimed) familiar with most of the 55 listed LLS. However, they have not been using them extensively; this is especially so among Secondary teachers.
2. For Primary and Secondary teachers combined, there are only four LLS which they considered as of moderate effectiveness or better. They considered 23 LLS as of only some effectiveness and the remaining 28 LLS as being noneffective.
3. The teachers mentioned very few additional strategies which they have tried and found effective.
4. When combined, the Primary and Secondary teachers mention memory, vocabulary, and written expression as the top three difficulties of the students in learning Chinese.

In view of the patterns of familiarity and use, the results have implications for training the teachers in the use of LLS to enhance their lessons and thereby raise the students' achievement in learning Chinese.

Since the teachers claim to be reasonably familiar with the LLS but underutilizing them, there is a need to conduct workshops to (1) encourage teachers to use more frequently the LSS with which they are familiar as and when suited to the learning tasks and (2) train the teachers in those LLS that they are not yet familiar. This is especially needed for teachers teaching in secondary schools. For the training to be effective, it needs to focus on where the deficits are found, that is, cognitive strategies and social strategies for Primary teachers and memory strategies, cognitive strategies, and determination strategies for Secondary teachers. Moreover, for greater relevance to the students' learning needs and hence the teachers' instructional needs, the training has to emphasize the application to areas where difficulties are perceived by the teachers, namely, memory, written expression, and writing for Primary teachers and memory, vocabulary, and written expression for Secondary teachers. In addition, the use of dramatization, ICT, mind-mapping, language games, and even dictation may be introduced as LLS in addition to the listed LLS, as these were mentioned by some teachers who have used them and found them effective.

Besides practical implications for training, three points of conceptual as well as practical significance need be discussed.

It is not known why the teachers have not used the LLS more frequently than desirous although they claim familiarity. Two possible reasons are hazarded here. Firstly, they might not know that the effectiveness of LLS has been evidenced by research, since reading research literature is not a normal part of the teachers' professional activity. Secondly, they feel the urge to cover the syllabus and textbooks (*running from cover to cover*, so to speak) within the limited time and therefore tend to adopt a teacher-centered approach, with little time for teaching anything else but the text and doing this by telling. They might think teaching LLS is extraneous to their normal teaching and can therefore be seen as a waste of the already limited instructional time. This is especially so among Secondary teachers as reflected in their much lower use of LLS.

The finding that not many *additional* strategies have been mentioned in response to the open-ended question suggests two things. First, the list of 55 LLS is exhaustive enough to cover almost all strategies known to the teachers. Second, as alluded to above, the teachers have to rush through the syllabus and textbooks, leaving them with neither mind nor time for more innovative and effective instruction such as using the LLS so that the students *learn how to learn.*

It is noteworthy that both memory and written expression are at the top of the list of student difficulties as perceived by both the Primary and Secondary teachers. In addition, Primary teachers find writing (of Chinese characters) and Secondary teachers find vocabulary difficulties of their students. That memory is a learning problem obviously has to do with the Chinese writing system being logographic and therefore posing much greater demand on memory and learning. It is an oft-heard discontentment that, when compared with other subjects in the school curriculum, Chinese requires disproportionate time to learn and yet so difficult to score.

Generally, Chinese characters are relatively isolated from one another with little cues to pronunciation and meaning, and combinations of Chinese characters may take on other unrelated meanings making memory even more challenging. For instance, *east* (东) and *west* (西) when combined means *things* (东西). At times, the same two Chinese characters when placed in different sequences have different meanings, for instance, 痛心 (sad) and 心痛 (heartache) and 感情 (Affection) and 情感(Emotion). Moreover, for some Chinese characters, even a change in the position or shape of a stroke or an addition of one stroke results in different characters and meanings, for example, 大 (big), 太 (overly), 犬 (dog), and 尤 (especially, or used as a surname). Such a writing system is really a great challenge to both the teacher and students.

That written expression is a top difficulty is also understandable, since memory for Chinese characters is already identified as a problem discussed above. At a lower level, difficulty in written expression could mean students having problems writing grammatically acceptable sentences without the interference (negative transfer) of English. This, as research on interlanguage has shown, is inevitable when learning two languages concurrently and may even a necessary transitional stage to effective bilingualism.

Added to this, at a higher level, is the Chinese tradition of respect for literary works (*wenxue zuopin* 文学作品). Chinese Language teachers may consciously or

subconsciously value and therefore encourage students' compositions of some literary quality and devalue compositions of factual knowledge or information. In fact, it has been a tradition and common practice of Chinese Language teachers to select students' works of perceived literary quality for school and media publications. In addition, it is a traditional Chinese belief that writings are carriers of moral values (*wen yi zai dao*, 文以载道). Thus, students, especially those in the Secondary schools, may be asked to write essays on moral themes for which they have neither the moral maturity nor the needed concepts and vocabulary. This naturally makes written expression a problem. As for the vocabulary problem of Secondary students, this could well show up in their written expression with limited choices of words, perhaps as a result of limiting the learning of Chinese language to the prescribed textbooks and little reading beyond these.

Admittedly, these are more deep-rooted problems of teaching Chinese in Singapore schools and require long-term and concerted efforts to solve, although they may be partially minimized through training courses and workshops to equip teachers with memory strategies and re-orientation with regard to the goal of learning Chinese in the Singapore context.

In conclusion, although Chinese language may not be the *most* difficult language to learn, it is definitely among the difficult languages of the world. Its difficulty is mainly attributable to the writing system and, added to this in the Singapore context, the limited language instructional time and lack of opportunity of practice and application. The fact that English is easier to learn may cause the young students (and, perhaps, their parents, too) to exaggerate the difficulty of Chinese language.

Since learning the two languages is a given condition, there is the need for Singapore to train Chinese Language teachers in the use of LLS which research has found helpful in the learning of second languages so that the students can emulate them and learn Chinese language with greater ease and better attainment and, hopefully, greater joy and deeper appreciation as well. In this regard, the findings of the present study provide useful specific information for identifying areas of needs where strategies for learning and teaching of Chinese are concerned.

Admittedly, in view of the well-known difficulty of learning and hence teaching of Chinese language, in Singapore and other countries, the findings of the present study may look common-sensical. However, the findings provide empirical evidence for what has been commonly believed and suggest some solutions to the problems, partially at least.

As the data are derived from surveying Primary and Secondary teachers, it may be tinted by their personal experiences and expectations and may not totally reflect the reality. This means the findings need be interpreted with due caution against possible response bias such as acquiescence – the tendency to agree. On the other hand, there is also no reason to suspect the teachers consciously fake as they have no motivation to do so, since the completion of the questionnaire is anonymous.

It is recognized that much of the listed LSS are found to be helpful to learners of English but may and may not be equally effective to help in the learning of Chinese in view of the differences between the two languages which Singapore students are learning concurrently. However, many of the LLS are also cognitive or psychological

in nature and not language-specific. There is, therefore, a value in researching into the LLS (the listed 55 and those suggested by Chinese Language teachers) to identify those that are particularly useful to young learners of Chinese language in the school context, taking into consideration that Chinese learners are increasingly diversified here in Singapore schools in terms of ability and home background.

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Appendix

Language learning strategies

Memory strategies
1. Point out the relationships between what is already learned and new words to be learned 指出当前要学的字词和以前学过的字词之间的关系。
2. Imbed new words in sentences for presentation 把生字新词容纳在句子中提出。
3. Link the pronunciations of new words with relevant images 联系生字新词的读音和有关的图像
4. Ask students to imagine relevant situations for the new words 要学生想象可以用生字新词的情境。
5. Help students learn new words through rhymes 利用押韵的字词帮助生字新词的学习。
6. Present new words by using flashcards 利用字卡(闪烁片)提出生字新词
7. Use actions to present the meanings of new words 用动作表达生字新词的意思。
8. Point out the locations of new words in the texts 指出生字新词在课文中的位置。
9. Link new words with the students' life experiences 联系生字新词和学生的生活经验。
10. Organize new words into groups for learning 把生字新词分成几组,让学生学习。
11. String new words into story lines to help students remember 把生字新词串连成故事情节去帮学生记忆。
12. Analyze the components of new Chinese characters 分析单字的部件结构。
13. Analyze the pronunciation components of Chinese characters 分析单字的读音组成。
14. Ask students to read aloud the new Chinese characters 要学生大声读出字音。
15. Ask students to imagine the new Chinese characters 要学生闭目想象字形。

16. Present new words in Chinese idioms 用成语提出生字新词。
17. Ask students to imagine situations relevant to word meanings. 要学生用字义想象情境。
18. Ask students to write synonyms and antonyms 要学生写下同义词或反义词。
19. Ask students to repeat the pronunciations of new words 要学生重复念出生字的读音。
20. Ask students to classify words into groups (e.g., animals, etc.) 要学生把生字新词归类(例如动物、用具、蔬菜等)。
21. Ask students to think of Chinese characters of similar sounds 要学生联想已经学过的同音字。
22. Ask students to imagine new characters being learning 要学生想象当前所学的生字。
23. As students to break new Chinese characters into components and to think of relevant situations 要学生把生字的部件分解,并且用它们去联想有关的情境。
24. Teach words with same meanings together 把同义字词合起来教。
25. Teach Chinese characters of same radicals together 把有相同部首或偏旁的字合起来教。
Cognitive strategies
26. Revise new words with students regularly 和学生经常复习生字新词。
27. Present word lists for students to learn 用生字表和词汇表提出,要学生学习。
28. Ask students to read aloud new words repeatedly 要学生重复念出生字新词。
29. Ask students to write new words repeatedly 要学生重复写出生字新词
30. Let students learn new words by using word lists 要学生用生字表学习。
31. Ask students to take notes during lessons 要学生在上课时做笔记。
32. Use the *Vocabulary* in the texts to teach word meanings 用课文中的词语解释教学生字新词。
33. Use audio-recording to teach new words 用录音带帮助生字新词的教学。
34. Ask students to compile own word lists as personal records of learning 要学生设立自己的词汇表,记录新学的生字新词。
35. Ask students to label objects to help in learning new words 要学生把字词写成标签,贴在有关的物件上。
36. Ask students to copy word meanings found in dictionary 要学生记下生字新词在字典中的所在。
37. Ask students to copy examples of word meanings given in dictionary 要学生写下字典中解释生字新词的例子。
38. Ask students to make own flashcards and carry them 要学生自制生字新词的卡片,随身带着。

Social strategies
39. Ask students the English equivalents of new words 问学生生字新词的英文翻译。
40. Ask students for words with similar meanings 问学生意思相同的单字或词语。
41. Ask students for the meanings of new words 问学生字词的解释。
42. Let students learn new words through group activities 让学生在小组活动中学习生字新词。
43. Arrange for students to interact with people who speak good Mandarin 安排学生跟讲纯正华语的人交谈。
44. Arrange for students to interact with Mandarin-speaking people, though not necessarily good in it 安排学生跟讲华语但不一定纯正的人交谈。
Metacognitive strategies
45. Use Chinese songs, films, and news in lessons 在教学时利用华语歌曲、影片、新闻等。
46. Guide students to regularly revise new words they have learned 带学生时时复习学过的字词。
47. Arrange for students to read Chinese newspapers and magazines 安排学生阅读华文报纸和刊物。
48. Arrange for students to read books other than textbooks 安排学生于都课外书籍。
49. Use various methods to ensure students understand the meanings of new words 用不同的方法确保学生了解生字新词的意思。
50. Focus teaching only on new words which will be assessed 集中能力只教和考试有关的生字新词。
51. Help students to regularly revise new words taught 帮助学生定期复习教过的生字新词
Determination strategies
52. Adopt the components approach to teach Chinese characters 利用部件教学。
53. Guide students to guess word meanings from different parts of texts 引导学生根据前后文推测字义。
54. Ask students to make use of bilingual dictionary 要学生利用双语词典。
55. Ask students to use single-language Chinese dictionary 要学生利用华语词典。

Note: Adapted from Hsu (2012)

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Chapter 8
Chinese Language Teachers' Perception of Social Status and Job Satisfaction

Kaycheng Soh

In 2011, Forbes published *The Ten Happiest Jobs* (Denning 2011). The article was based on a report of the General Social Survey by the National Organization for Research at the University of Chicago. Surprisingly, teachers (in general) are among the list and ranked sixth, preceded by clergy, firefighter, physical therapists, authors, and special education teachers. In the seventh to tenth place are artists, psychologists, financial services sales agents, and operating engineers. In contrast, there are the ten most hated jobs which are generally much better paying and have higher social status: director of information technology, director of sales and marketing, product manager, senior web designer, technical specialist, electronic technician, law clerk, technical support analyst, computerized numerical control machinist, and marketing managers. An explanation offered for the surprising finding is: *What's striking about the list is that these relatively high level people are imprisoned in hierarchical bureaucracies. They see little point in what they are doing. The organizations they work for don't know where they are going, and as a result, neither do these people* (Denning 2011: para. 2). In other words, pay and social status may not be the crucial factors in job satisfaction; workers need to see meanings in what they are employed to do and know where they are heading to as well as do not feel trapped in the organizational structure.

More recently, the MetLife *Survey of the American Teacher: Challenges for School Leadership* reported that teachers' job satisfaction has reached the lowest points in a quarter of the century (Richmond 2013). The survey involved 1000 K-12 school teachers forming a representative sample of the American teachers. Only 39 % of the teachers described themselves as satisfied with their jobs; this is a drop of 23 % from the 2008 survey and a drop of 5 % over the previous year. Contributing factors include curtailed school budgets, opportunities for professional development,

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and time for collaboration with colleagues. Moreover, half of the surveyed teachers, compared with only one-third in 1985, described that the stress levels have gone up. It is also interesting that teachers teaching schools with large proportions of students from low-income families are less likely to get a good rating for their performance. However, in contrast, most recently Crotty (2014) reported a rising job satisfaction among American teachers. The survey was conducted by the Center for American Progress. Using data from the 2011 to 2012 *Schools and Staffing Survey*, the researcher found a five-year high in overall job satisfaction and an increasing sense of autonomy in the classroom.

It is a truism that what a worker *thinks of* and *feels about* his job can impact his job performance and his desire to stay on or leave the job. This is true to many workers and educational workers (teachers) are no exception. When workers, educational or otherwise, think of their jobs, they are likely to compare these with other jobs requiring similar qualifications, in terms of whether the job has a high or low social status or whether it is valued or unvalued in the society. As for the feelings about the job, it is basically whether they are satisfied with it and are happy doing it and will continue doing it. These two aspects of job status and job satisfaction can be expected to be mutually influencing, and they together affect job performance that may affect the people their job serves. This in fact is the basic tenet of the *International Perspective on Teaching and Learning* (OECD 2014: Fig. 7.1).

Recently, Iwu, Gwija, Benedict, and Tengeh (2013: 840) summarized several studies showing the consequences of dissatisfied teachers and concluded that teacher dissatisfaction is associated with poor student pass rates and a host of psychological and physiological consequences such as fatigue, muscle tension, and weight loss. Moreover, such psychological and physical stress can cause the teacher to miss more days of work, dread going to work, or even consider giving up the job. Dissatisfied teachers may also display attitudes of cynicism, resentfulness, apathy, or anxiety. They may also develop low motivation and poor self-esteem. The authors argued that teacher dissatisfaction will not augur well for a nation and the associated poor pass rates of their students will have negative impact on economic development of the nation.

Iwu et al. (2013) surveyed a random sample of 279 high school teachers in Western Cape. The respondents aged between 23 % and 65 % and 70 % of them have teaching experience of between 6 and more than 21 years. There were 36 % male and 64 % female teachers in the sample. As the survey results show, factors influencing teachers motivation are, in descending order, working conditions, job security, growth opportunities, duties and responsibilities, pay/salary, interpersonal relationships, supervision/leaderships, recognition and reward, and job title. In the South African context, the authors, while surprised by the finding that pay or salary was not given higher priority by the respondents, concluded thus:

> The result of this study suggests that highly motivated educators experience job satisfaction; and also perform better than their poorly motivated counterparts. In terms of motivation, the results suggest that extrinsic factors tend to exert more influence on the educators motivation than intrinsic factors.

Most relevant to the present study are two recent publications pertaining to teachers' perception of the social status of the teaching profession in the society and their job satisfaction. The first is *Global Teacher Status Index* (Dolton and Marcenaro-Gutierrez 2013) and, the second, *TALIS 2013 Results: An International Perspective on Teaching and Learning* (OECD 2014). Relevant information are highlighted hereafter. These were relevant to the present study in both conceptualization and instrumentation:

GTSI 2013 *Global Teacher Status Index* (GTSI; Dolton and Marcenaro-Gutierrez 2013) asserts that how the teachers are respected by the society has an impact on how effectively they teach and hence how effectively children learn; thus:

> We find that there are major differences across countries in the way teachers are perceived by the public…. This affects the kind of job they do in teaching our children, and ultimately how effective they are in getting the best from their pupils in terms of their learning. (Dolton and Marcenaro-Gutierrez 2013: 8)

The GTSI 2013 is meant to complement international comparative studies of student achievement such as the Programme for International Student Assessment (PISA) and Progress in International Reading Literacy Study (PIRLS) of the Organisation for Economic Co-operation and Development (OECD) by providing information about teachers. It argues that various aspects of the teachers' professional lives are much less understood. The index seeks to understand the teachers with regard to the aspects such as how teachers are respected in relation to other professions, whether parents would encourage their children to be teachers, what people think teachers ought to be paid, and others.

A total of 21 countries participated in the survey, including 17 Western countries and four Asian countries (China, Korea, Japan, and Singapore). The countries were chosen for their most favorable and least favorable performance in PISA and Trends in International Mathematics and Science Study (TIMSS) and that they have attributed the most policy credence to the PISA score. The sample of countries was to include at least one country for the major continent or culture. Web-based survey was conducted and 1000 representative respondents in each country were included. The respondents were between the ages of 16 and 70. Considerations were given to gender, educational level, location, and ethnicity.

To measure teacher status, respondents were asked to rank 14 occupations in order of how they were respected. The occupations were primary school teacher, secondary school teacher, head teacher, doctor, nurse, librarian, local government manager, social worker, website designer, police officer, engineer, lawyer, accountant, and management consultant. These were chosen as graduate (or graduate-type) jobs and were also chosen carefully with respect to how similar or dissimilar the work might be to teaching.

Where teacher status is concerned, the study found the following:

1. There is no international consensus on what constitutes a comparative profession for teaching.

2. The average respect ranking for a teacher across the 21 countries was 7th out of 14 professions, indicating a midway respect ranking for the profession.
3. Two-thirds of countries judged the social status of teachers to be most similar to social workers.

There is a very wide variation in the esteem accorded to the teachers in the participated countries. For example, while 50 % of parents in China would encourage the children to become teachers, only 8 % would do so in Israel. Parents in China, South Korea, Turkey, and Egypt were most likely to encourage their children to become teachers. These countries also showed a higher level of belief that pupils respect their teachers. On the other hand, in most European countries, respondents thought that pupils disrespect teachers.

In terms of teacher's pay, in most countries, the perception accords with reality. However, teachers earned more than people thought they did in Israel, Japan, Korea, Singapore, and the USA. On the other hand, the starting pay for teachers in Brazil, Finland, New Zealand, Spain, and the UK is 20 % lower than perception.

In GTSI 2013, Singapore scored 46.3 for Teacher Status Index and ranked eighth, preceded by China (100.0), Greece (73.7), Turkey (68.0), Korea (62.0), New Zealand (54.0), and Egypt (49.3). The mean for the 21 participating countries is 37.0 (SD = 24.6). Thus, Singaporean teachers received slightly more than international average in social status or respect for professions.

In terms of pay, Singaporean teachers have the highest annual salary of USD 45,755 when the international mean is USD 30,772 (SD = 10,048). In the context of the present study, it is relevant to point out that the annual salary of teachers in China is USD 17,730, the second lowest among the countries, preceding only Egypt (USD 10,604). This could be explained, partly at least, as being due to the countries' GDP/capita for which Singapore has USD 61,1803 when the international mean is USD 29,996 and China USD 9,233; in other words, the affordability of the country. It is interesting that the correlation between GDP/capita and teacher salary is a significant high positive $r = 0.84$ ($p < 0.05$, two-tailed). It may be suspected that Singapore is able to pay her teachers so much because of the pint-size of the country with a population of only 5.3 million. However, Finland which has a population of 5.4 million and a GDP/capita of USD 34,660 pays her teachers USD 28,780, only slightly more than one-sixth of Singapore. In fact, the correlations between population size and teacher salary is a nonsignificant low negative of $r = -0.25$ ($p > 0.05$, two-tailed). These go to indicate that salary is not a critical factor of social status as far a social status is concerned.

TALIS 2013 *TALIS 2013 Results: An International Perspective on Teaching and Learning* (TALIS; OECD 2014) gives teachers and school leaders a voice to speak about their experience and focuses on themes that can influence teaching effectiveness. The survey began in 2008 and has a very broad coverage of conditions in schools, including initial training, professional development, and climates and facilities of classrooms and schools. Most relevant to the present study is the teachers' satisfaction with and feelings about their job. A total of 34 countries took part in the survey in 2013, most being European countries and only four Eastern countries (i.e.,

Korea, Malaysia, Japan, and Singapore). Participated in the survey were 4130 teachers from 166 Singaporean schools.

TALIS 2013 (OECD 2014: 183) posits in Figure 7.1, *Framework for the Analysis of Teachers' Self-efficacy and Job Satisfaction*, that teachers' self-efficacy (including classroom management, instructional strategies, and student engagement) and their job satisfaction (including satisfaction with the profession and with current work environment) are mutually influencing and that these two aspects influence student outcome and teacher retention. In other words, how teachers see themselves as being efficient on the job with lead to satisfaction with the job and vice versa. Moreover, their perceptions and feelings in these two aspects will have an impact on how well they teach (as reflected in how well their student learn) and also on whether they will remain as teachers. This implies that teachers need be made to feel competent and appreciated as well as comfortable with the schools they are teaching in.

In *TALIS 2013*, teacher's job satisfaction was measured with 10 items with a mixture of seven positive and three negative wordings pertaining to teachers' self-evaluation of performance, decision to become teachers, happiness in the workplace, regret with being a teacher, and desire to change job or workplace, etc. Table 8.1 is an extract from the TALIS 2013 showing teachers' job satisfaction in the international scene and of Singapore.

Overall, it is gratifying that Singapore (scored 67) is slightly above the world average (61) in teachers' job satisfaction. However, as overall may hide important details, it is necessary to look at how Singaporean teachers did in TALIS 2013 when compared with international averages at the item level.

As shown in Table 8.1, using a 5 % difference as a guide, there are nontrivial differences between Singapore and the international averages. On the positive side, Singaporean teachers are clearly happy with their job. This is indicated by their responses to Item 1 (Advantages of being teachers), Item 2 (Would again choose to teach), and most impressively Item 8 (Teaching valued in the society). However, on

Table 8.1 Teachers' job satisfaction: International and Singapore

	International	Singapore
The advantages of being a teacher clearly outweigh the disadvantages	77.1	83.6
If I could decide again, I would still choose to work as a teacher	77.6	82.1
I would like to change to another school if that were possible	21.2	35.1
I regret that I decided to become a teacher	9.5	10.7
I enjoy working at this school	89.7	85.9
I wonder whether it would have been better to choose another profession	31.6	45.9
I would recommend my school as a good place to work	84.0	73.2
I think that the teaching profession is valued in society	30.9	67.6
I am satisfied with my performance in this school	92.6	87.1
All in all, I am satisfied with my job	91.2	88.4

Source: OECD (2014), Table 7.2, pp. 407–408

the negative side, more Singaporean teachers would like to change school (Item 3) and wonder they would be better off in another profession (Item 6). In sum, while the majority of Singaporean teachers found teaching a satisfying job, there are a sizable proportion of them not as happy as their peers in their present schools.

With the above background, the present study seeks answer to the following questions:

1. How do Chinese Language teachers see their social status against the selected professions as well as against teachers of other subjects in the school? And what do they believe are the factors affecting their social status?
2. How satisfied are the Chinese Language teachers with their job? And what do they think contributes to job satisfaction or the lack of it?

Method

Measures

Social Status To measure the Chinese Language teachers' perceptions of their own social status, they were requested to identify the profession which has a social status comparable to teaching in general. The professions against which the teaching profession is to be compared are medical doctor, policeman, lawyer, engineer, manager, accountant, librarian, management consultant, nurse, social worker, and webpage designer. The choice of these professions follows closely those included in the GTSI (Dolton and Marcenaro-Gutierrez 2013).

However, as the Chinese Language teachers' function in the school where there are teachers of other subjects, it is interesting to find out how the Chinese language teachers see themselves vis-à-vis their colleagues. Therefore, they were requested to indicate the subject teachers who have a comparable social status.

Job Satisfaction To measure the Chinese Language teachers' satisfaction with their job, they were requested to respond to set of nine statements depicting positive or negative feelings about things happening on the job. The list follows closely the one in TALIS 2013 though not exactly.

To assist in interpreting the results, other questions relevant to the above two main concerns were also asked. These include factors related to social status, salary, encouragement for own child to become a teacher, and thought of leaving the profession.

Respondents

A total of 311 Chinese Language teachers participated in this survey, with 177 from primary schools and 134 from secondary schools. Using the *Sample Size Calculator* (The Survey System 2012), a sample of this size for an estimated population of 3000

Chinese Language teachers has a confidence interval of 5.26 %, slightly greater than the conventional 5.00 %, for confidence level of 95 %. However, a word of caution is that the compositions of the two groups of teachers may not be consistent with those in the populations of primary and secondary Chinese Language teachers.

Analysis

The data were organized and then presented as the percentages, means (standard deviations) as appropriate. Comparisons between the response patterns of the primary and secondary teachers were done by calculating the correlations where applicable.

Results

There is a female preponderance in both groups, slightly more so in the primary group. Teachers in both groups have extensive years of teaching. The primary group tends to be less experienced, with 50 % having taught for five or less years, whereas the corresponding figure for the secondary group is 36 %. In terms of qualification, both groups have 80 % holding a university degree, but while primary group has 9 % non-graduates and 11 % postgraduates, secondary group has no non-graduates and 21 % postgraduates (Table 8.2).

Teachers' Social Status

Status in Society Respondents were asked to pitch social status of the teaching profession as they perceived against eleven other commonly known professions. As can be seen in Table 8.3, for the primary teachers, the three professions perceived to

Table 8.2 The respondents

		Primary (N = 177)	Secondary (N = 134)	Combined (N = 311)
Gender	Male	8.5	12.7	10.3
	Female	91.5	87.3	89.7
Experience	Less than 3 years	24.9	14.2	20.3
	3–5 years	24.9	21.6	23.5
	6–8 years	16.4	20.1	18.0
	9–11 years	11.3	13.4	12.2
	12 or more years	22.6	30.6	26.0
Qualification	Non-graduate	8.5	0.0	4.8
	Bachelor's degree	80.8	79.1	80.1
	Postgraduate	10.7	20.9	15.1

Table 8.3 Chinese language teachers' perception of social status

	Primary	Secondary	Combined
Medical doctor	4.0	3.7	3.9
Policeman	8.5	9.0	8.7
Lawyer	0.0	0.0	0.0
Engineer	12.5	12.7	12.6
Manager	4.0	4.5	4.2
Accountant	2.3	1.5	2.0
Librarian	2.3	3.0	2.6
Management consultant	5.1	3.7	4.5
Nurse	13.1	10.4	11.9
Social worker	48.3	51.5	49.7
Webpage designer	0.0	0.0	0.0

be on par with teaching are social worker (48 %), engineer (13 %), and nurse (13 %). For the secondary teachers, the three comparable professions are also social worker (52 %), engineer (13 %), and nurse (10 %). Although the percentages vary somewhat, the three professions are the same for the two groups. In fact, the correlation between the two patterns of response is $r = 0.997$ ($p < 0.05$, df 9, two-tailed), indicating practically a perfect correlation, and the two groups could well be considered as having no difference at all in their perception of social status of teachers.

The respondents were realistic to pitch teacher against social worker, engineer, and nurse. This is consistent with other studies. It is interesting that 4 % of both primary and secondary teachers considered the teaching profession as on par with medical profession and manager but none with the legal profession. There are also 9 % of both pegged teachers against policemen.

Factors Influencing Status Respondents were asked to indicate which of the listed six factors influence their social status. As shown in Table 8.4, 41 % of the primary teachers chose professional nature, followed by 17 % choosing influence on the society's development, and then 11 % choosing influence in students' characters and 10 % choosing salary. However, there are 13 % indicating that the status was influenced by none of the listed factors. A similar pattern of response was observed for the secondary teachers, except that salary was chosen as the second most influencing factor. The patterns of response between the two groups are highly correlated ($r = 0.942$, $p < 0.05$, df 5, two-tailed).

The finding that teacher's pay was considered by 10 % of primary teachers and 18 % of secondary teachers as a not so important influencing factor is consistent with findings of other studies. The emphasis on the professional nature of teacher's work as the influencing factor is indicative of the professionalism of the respondents. Of course, the fact that Singaporean teachers are well paid compared with teachers in many other countries might have reduced the importance placed on salary. However, influences on student' characters and the society's development received 12 % and 16 %, respectively; this shows that the teachers see meanings of

Table 8.4 Factors influencing teachers' social status

	Primary	Secondary	Combined
Teacher's salary	10.2	17.9	13.5
Influence on student's future	7.9	9.7	8.7
Influence on students' characters	10.7	12.7	11.6
Influence on the society's development	16.9	14.2	15.7
Influence on world ranking	0.0	0.7	0.3
Professional nature of teacher's work	41.2	32.1	37.3
None of the above	13.0	12.7	12.9

teaching beyond the immediate and extrinsic reward. It is also interesting that influence on world ranking was not considered at all; this suggests that either the teachers were not aware of the international achievement surveys (e.g., PISA, TIMSS) or these were not of relevance to them, although they are to the administrators and policy makers.

The respondents were also asked, *If none of the above, what*? There were 40 written responses, most of which named the recognition, understanding, and respect of the parents, the society, and the nation as the influencing factor of teachers' social status. Below are some such responses:

- *Parents' evaluation of teachers.*
- *The affirmation of teachers by the society (government, community, parents, sponsors, school).*
- *The community's understanding of the teachers' actual work.*
- *The nation's attitude toward teachers.*

Status Within School Respondents were asked how they perceived their status in the school context comparing with teachers of other subjects. Table 8.5 shows that 33 % of the primary Chinese Language teachers perceived their status being on par with English Language teachers, and another 33 % considered themselves comparable to teachers of Social Studies. However, only 13 % of the secondary Chinese Language teachers perceived themselves being on par with English language teachers, but 44 % compared themselves with teachers of Social Studies. Moreover, there were 20 % Chinese Language teachers who pitched themselves against teachers of Art, Music, and Physical Education and another 20 % against Teachers of Technical Education and Food and Consumer Education. The correlation between the patterns of the primary and secondary Chinese Language teachers is only a moderate $r = 0.592$ ($p > 0.05$, df 4, two-tailed) indicating that the two groups perceived differently.

The different patterns of response of the primary and secondary respondents indicate the different school contexts. While 33 % of primary Chinese Language teachers considered themselves being on par with the English Language teachers, only 13 % of secondary Chinese Language teachers felt likewise. This could well be an indirect reflection of the relative emphasis placed on the two languages at the two levels: Chinese Language is one of the four equally weighted subjects in the Primary School Leaving Examination, but it is only one of the many subjects at the

Table 8.5 Chinese language teachers' perception of social status within the school

	Primary	Secondary	Combined
English language	32.8	13.4	24.4
Mathematics	3.4	0.0	1.9
Science	13.0	2.2	8.3
Social studies (geography, history)	32.8	44.0	37.6
Art, music, physical education	11.3	20.1	15.1
Technical, food, and consumer education	6.8	20.1	12.5

Table 8.6 Factors influencing Chinese language teachers' social status

	Primary	Secondary	Combined
Teacher's salary	0.0	0.0	0.0
Influence on student's future	20.9	35.1	27.0
Influence on student's character	11.9	11.2	11.6
Influence on the society's development	5.6	7.5	6.4
Influence on world ranking	17.5	10.4	14.4
Professional nature of teacher's work	24.9	21.6	23.5
None of the above	19.2	14.2	17.0

GCE O-Level Examination, albeit compulsory. It seems that to the secondary Chinese Language teachers, the subject is more similar in nature and hence importance to non-science subjects, as very few compared it with science and mathematics.

Factors Influencing Within-School Status Respondents were asked to indicate which of the listed six factors influence their social status. As shown in Table 8.6, 25 % of the primary teachers chose professional nature, followed by 21 % choosing influence on the students' future. Another 18 % considered influence on world ranking as the factor and 12 % chose influence on students' characters. However, there were 19 % who considered none of the listed factors.

As for the secondary Chinese Language teachers, 35 % chose influence in the students' future as the factor. This is followed by 22 % who considered professional nature as the factor. Besides, 11 % chose influence on students' characters and 10 % chose influence in world ranking. However, 14 % considered the listed factors as not influencing. The correlation between the response patterns of the primary and secondary respondents is a high $r = 0.785$ ($p < 0.05$, df 5, two-tailed), indicating similarity in perceptions to a large extent.

It is interesting that, for the two groups combined, influence on student's future attracted the most responses, followed closely by professional nature of teacher's work. This reflects the respondents' concern for future orientation more than immediate effect of teaching. It is gratifying that the teachers are aware of their impact on their students in the long run.

Table 8.7 Encouragement for own children to become teachers

	Primary		Secondary		Combined	
	Son	Daughter	Son	Daughter	Son	Daughter
Definitely will do	4.0	7.3	2.2	1.5	3.2	4.8
May do	44.1	59.3	30.6	55.2	38.3	57.5
May not do	40.1	24.9	36.6	27.6	38.6	26.1
Definitely will not do	11.9	8.5	30.6	15.7	20.0	11.6

To the question *If none of the above, what?* 58 respondents made written responses. Most of the responses mentioned mainly the valuation of the mother tongue language by the school leaders and, somewhat lesser, the parents. Typical responses are these:

- *The school leader values the Mother Tongue Language.*
- *The parents' and students' attitude towards the Mother Tongue Language.*

Encouragement for Children to Become Teachers When asked whether they would encourage their children to become teachers, only a small proportion of the respondents were positive (Table 8.7). Generally, the primary teachers were more positive than were the secondary teachers. Also, both groups of teachers were more positive for the daughter than the son. Moreover, the correlations of response patterns are stronger for the daughter ($r = 0.968$, $p < 0.05$, df 2, two-tailed) than for the son ($r = 0.740$, $p > 0.05$, df 2, two-tailed). In other words, the primary and secondary teachers agreed more when the daughter is involved, whereas their view regarding the son is less similar.

The difference in response patterns concerning sons and daughters of the two groups of respondents may well indicate the aspirations parents have for their children of different gender. It is a fact that males have more career choices than females even in Singapore. Moreover, traditionally, teaching has been considered a job more suitable for females than for males, especially at the primary school level. Thus, the observed difference does not come as a surprise.

Asking parents whether they would encourage their children to opt for a job is an indirect way of finding out whether the parents value the job. In this sense, the response patterns indicate the slightly more positive attitude the respondents have for teaching.

Respondents were asked for the reasons they would or would not encourage their children to become teachers. For this, there were 149 written responses.

For sons, positive responses are illustrated as follows:

- *Teaching is a stable job and it gives a sense of achievement.*
- *Help students to become useful and contributing members of the nation and society.*
- *If he is interested, I have no objection.*
- *Hope he will pass on the values and knowledge he has learned.*
- *Teaching is a respectable job, and males have more opportunities of promotion.*

Examples of neutral responses include these:

- *Depends on his interest and strengths.*
- *Have to consider his aspiration, character, and ability.*
- *Have to see if he is interesting in teaching.*
- *He should make his choice; I am neither supporting nor objecting.*
- *I will respect his choice.*

Negative responses are illustrated thus:

- *Teaching means hard work.*
- *It is difficult to look after children.*
- *He will have more opportunities to develop in the private sector.*
- *Teaching is not suitable for males.*
- *Very tiring and not valued in the society.*
- *Limited scope for development.*

For daughters, positive responses include these:

- *The work environment is relatively simple job and the working hours are regular.*
- *Girls are more patient and teaching is a stable job without having to work overtime.*
- *It is a meaningful job.*
- *The school is a protected work environment.*
- *It is a stable job, allowing the work and look after the family at the same time.*

Here are some neutral responses:

- *If she wishes, I have no objection. She has to qualities to become a teachers – caring, articulate, like to share knowledge and experience.*
- *I will respect her interest.*
- *Depends on whether she likes it.*
- *As long as she like it.*
- *She has the right to choose.*

Illustrative negative responses:

- *Teaching is a hard work.*
- *May not have time for the family.*
- *Too tiring; parents and students are unlike those in the past.*
- *Long working hours and difficult students.*
- *Heavy workload, student disrespect, and having to look after family: too tiring.*

Salary As Table 8.8 shows, when as asked for their views of their salary, 33 % primary teachers and 24 % secondary teachers considered their salaries to be just right. At the same time, 67 % of primary teachers and 74 % of secondary teachers considered their salaries being either *a little too low* or *much too low*. The primary teachers suggested an increase of 16 %, whereas the secondary teachers suggested an increase of 19 %. As shown by the standard deviations, the suggested increase is much greater among the secondary teachers. The patterns of response have a high correlation of $r = 0.951$ ($p < 0.05$, df 3, two-tailed).

Table 8.8 Teacher's salary

	Primary	Secondary	Combined
Much too high	0.6	0.7	0.6
A little too high	0.0	0.7	0.3
Just right	32.8	23.9	29.0
A little too low	34.5	41.8	37.6
Much too low	32.2	32.8	32.5
Suggested increase			
Mean	15.6 %	18.6 %	16.9 %
SD	9.7 %	15.9 %	12.7 %

Table 8.9 Thoughts of leaving the teaching profession

	Primary	Secondary	Combined
Many times	13.6	20.9	16.7
Once or twice	57.6	53.7	55.9
Never	28.8	25.4	27.3

Although Singaporean teachers are the highest-paid in the world, there is still a sizeable proportion of the respondents suggesting an increase in the teacher salary. This should not be taken to mean the Chinese Language teachers were unjustified or unrealistic, as they most like compared their salary with those of other professions in Singapore requiring comparable qualification than with teachers of other counties.

Thought of Leaving When asked whether they have ever thought of leaving the teaching profession, 29 % of primary teachers and 25 % of secondary teachers never have thought of this (Table 8.9). At the same time, 58 % primary teachers and 54 % secondary teachers have thought of leaving once or twice. Moreover, 14 % primary teachers and 21 % secondary teachers have thought of leaving many times. The patterns of responses correlate with $r = 0.876$ ($p > 0.05$, df 1, two-tailed), indicating a high degree of similarity.

If the percentages of responding *Once or twice* and *Never* were combined and interpreted as indicating staying or not really will leave teaching, then 83 % of the teachers are stable on the job. Some of the 17 % who have thought of leaving many times may ultimately leave if they find more attractive alternatives which they believe will be more satisfying than teaching. Although some turnover is natural and to be expected, this may upset the system as teacher turnover is disruptive to the schools and the students. It will be useful to find out from such teachers as to the reasons for them to consider seriously to leave teaching.

To the open-ended questions on the thought of leaving teaching, the respondents made 166 written responses. Below are some of the typical responses:

- *Long hour, great pressure, and heavy workload.*
- *Although the students are different every year, but the work is routine and monotonous.*

Table 8.10 Job satisfaction

	Primary	Secondary	Combined
Very satisfied	5.1	3.7	4.5
Satisfied	83.1	73.9	79.1
Unsatisfied	11.3	20.9	15.4
Very unsatisfied	0.6	1.5	1.0

- *Have to consider the salary and prospect.*
- *Having to handle too many things unrelated to teaching.*
- *Social status is low; unrespect locally.*

Job Satisfaction Respondents were asked to indicate their overall satisfaction with the job. As Table 8.10 shows, 85 % of primary and 77 % of secondary teachers felt *very satisfied* or *satisfied* with their job. There are, however, 12 % primary teachers and 22 % secondary teachers who indicated either *unsatisfied* or *very unsatisfied*. The response patterns correlate with $r = 0.988$ ($p < 0.05$, df 2, two-tailed), indicating highly similar feelings about the teaching job.

That 84 % of the respondents were either *very satisfied* or *satisfied* is reassuring. As alluded to earlier and shown by relevant studies, satisfied teachers are physiologically and psychologically healthier and will bring about better student performance. This also ensures a stable teaching force which is an advantage to the schools both administratively and professionally in that schools will be in a better position to plan for medium- or long-term improvement on the Chinese Language curriculum and instruction.

When asked for the sources of job satisfaction, 130 written responses were made. Typical responses are quoted below:

- *I like Chinese Language.*
- *Teach the students well so that they are good not only in school work but also grow in their lives. This gives me a tremendous sense of achievement.*
- *Although students generally do not like Chinese Language, but there are still some who will put in their efforts; this is my reward.*
- *Students are lovable and the work is meaningful.*
- *The salary is reasonably attractive and teaching is full of fun, although I have to do a lot of administrative chores.*
- *Students are appreciative.*
- *Feel competent. Moreover, Chinese Language inculcates cultural values which are lacking in other subjects. Wish to make a contribution.*
- *Still find time to be with the family; not bad!*
- *Occasionally get affirmation from school leaders, colleagues, parents, and students.*
- *Teaching Chinese Language is a challenge.*
- *Have good rapport with my students, this gives me a sense of achievement.*

Table 8.11a Aspects of job satisfaction (primary)

	Primary			
	SD	D	A	SA
The advantages of being a teacher clearly outweigh the disadvantages	1.1	17.5	77.4	4.0
If I could decide again, I would still choose to work as a teacher	1.1	22.6	53.1	37.4
I would like to changes to another school if that were possible	3.4	53.1	38.4	5.1
I regret that I decided to become a teacher	16.4	76.3	6.8	0.6
I enjoy working at this school	2.3	16.9	72.3	8.5
This school is a good place to work in	2.8	20.9	68.9	7.3
I thank that the teaching profession is valued in the society	2.3	29.9	63.3	4.5
I am satisfied with my performance in this school	1.1	12.4	81.4	5.1
All in all, I am satisfied with my job	0.6	9.6	84.7	5.1

Note: *SD* strongly disagree, *D* disagree, *A* agree, *SA* strongly agree

Aspects of Job Satisfaction Table 8.11a shows for the primary teachers their responses to the various aspects of job satisfaction. As shown therein, 75 % or more of them *agreed* or *strongly agree with* six of the seven positively worded statements, indicating that they found the advantages of being a teacher, would choose to become teachers again, enjoyed their present schools, found the school a good place to work in, were satisfied with own performance, and were generally satisfied with the job. Only 7 % regretted that they chose to become teachers. However, only 68 % believed that the teaching profession was valued in the society. On the negative side, 44 % would like to change to another school and 7 % regretted to have chosen teaching.

As Table 8.11b shows, the response pattern of the secondary teachers is highly similar to that of the primary teachers. However, the percentages of positive responses of the secondary teachers are generally somewhat lower than those of the primary teachers. It is worthy of note that while 91 % of primary teachers would choose to teach again, only 64 % of secondary teachers would do so, with a difference of 26 %. There other differences varying from 5 % (School a good place to work in) to 10 % (Advantage of being a teacher). On the negative side, 46 % would like to change school and 13 % regretted to have chosen to teach.

In fact, the correlation is a near perfect one of $r = 0.989$ ($p < 0.05$, df 8, two-tailed) for the *agree* response of the two groups of teachers. When the primary and secondary groups were combined (Table 8.11c), three-quarters or more of the Chinese Language teachers *agreed* or *strongly agreed* with six of the seven positively worded statements, indicating that they were satisfied with being teachers generally, and only two-thirds (67 %) believe that the society valued the teaching profession. However, in spite of such resounding positive response, there were 45 % who would like to change school, suggesting that there were some problems with the schools they were currently working in. It is gratifying that only 10 % indicated a regret for choosing teaching.

Table 8.11b Aspects of job satisfaction (secondary)

	Secondary			
	SD	D	A	SA
The advantages of being a teacher clearly outweigh the disadvantages	2.2	26.1	67.2	4.5
If I could decide again, I would still choose to work as a teacher	2.2	33.6	58.2	6.0
I would like to changes to another school if that were possible	2.2	51.5	41.0	5.2
I regret that I decided to become a teacher	6.7	80.6	12.7	0.0
I enjoy working at this school	1.5	25.4	70.1	3.0
This school is a good place to work in	2.2	26.1	68.7	3.0
I thank that the teaching profession is valued in the society	2.2	32.8	61.2	3.7
I am satisfied with my performance in this school	0.7	22.4	75.4	1.5
All in all, I am satisfied with my job	0.0	19.4	79.1	1.5

Note: *SD* strongly disagree, *D* disagree, *A* agree, *SA* strongly agree

Table 8.11c Aspects of job satisfaction (combined)

	Combined			
	SD	D	A	SA
The advantages of being a teacher clearly outweigh the disadvantages	1.6	21.2	73.0	4.2
If I could decide again, I would still choose to work as a teacher	1.6	27.3	55.3	23.9
I would like to changes to another school if that were possible	2.9	52.4	39.5	5.1
I regret that I decided to become a teacher	12.2	78.2	9.3	0.3
I enjoy working at this school	2.0	20.6	71.4	6.1
This school is a good place to work in	2.5	23.1	68.8	5.4
I thank that the teaching profession is valued in the society	2.3	31.1	62.4	4.2
I am satisfied with my performance in this school	0.9	16.7	78.8	3.5
All in all, I am satisfied with my job	0.3	13.8	82.3	3.5

Note: *SD* strongly disagree, *D* disagree, *A* agree, *SA* strongly agree

Although the general tone is positive, there are pockets of respondents who are not happy in their current schools and wish to change job place. Regrettably, this study did not ask for the reasons for such dissatisfaction.

Conclusion

Teachers' perception of the social status of the teaching profession and their feeling of job satisfaction are two separated yet related aspects of the teachers' professional life. The present study focuses specifically on these aspects of the Chinese Language teachers in Singaporean primary and secondary schools. The main findings are summarized below:

1. Half of the primary and secondary Chinese Language teachers perceived their social status as being on par with social worker, although engineer and nurse were considered by slightly more than one-tenth each. On the whole, the response patterns of the two groups are highly similar. Professional nature of teacher's work was considered as the most influencing factor on teacher's social status and was endorsed by slightly more than one-third of the Chinese Language teachers, slightly more by those in the primary school than those in the secondary school. Teacher's salary, influence on student's future, and influence on the society's development were each endorsed by between one-tenth and one-fifth of the teachers. The response patterns of the two groups are highly similar.
2. Within the school context, one-third of primary Chinese Language teachers compared themselves with English Language teachers and the other one-third with Social Studies teachers. Slightly more than four-tenths of secondary Chinese Language teachers compared themselves with Social Studies teachers and only slightly more than one-tenth with English Language teachers, but four-tenths with non-science teachers. The response patterns of the two groups of teachers were rather different. Professional nature of teachers' work was considered by one-quarter of primary school Chinese Language teachers and slightly more than one-fifth of secondary Chinese Language teachers. At the same time, one-fifth of those in the primary group considered influence on student's life but slightly more than one-third of those in the secondary groups considered influence on student's future as an important factor. World ranking was considered a factor influencing teacher's status within the school context by more primary Chinese Language teachers than those in secondary schools, but influence on student's character was considered an important factor equally by the two groups of teachers. Where influencing factors are concerned, the response patterns of the two groups of teachers were moderately similar.
3. The attitude toward teaching as inferred from whether the Chinese Language would encourage their children to become teachers is somewhat ambiguous, albeit slanting more toward the positive side. This is especially for the daughters, with slightly more than four-tenths for the son and almost two-thirds for the daughter. The response patterns of the two groups were highly similar where the daughter is concerned, but there is only a moderate degree of similarity where the son is involved.
4. Three-tenths of the Chinese Language teachers considered the teacher's salary were just right but the rest felt that it was a little too low or too low. This is in spite of the fact that teachers in Singapore have the highest pay internationally. The response patterns of the primary and secondary groups were highly similar.
5. While slightly more than one-quarter of the Chinese Language teachers have never thought of leaving the teaching professions, the rest have had this thought once or twice or more. The reasons for thinking of leaving include heavy workload, long hours, great pressure, monotony, duties unrelated to teaching, and social status.
6. Four-fifths of the Chinese Language teachers acknowledged that they were satisfied with the job and even one-twentieth felt very satisfied. Intrinsic interest in

Chinese language and culture, helping student grow in school work and life, appreciative students, sense of efficacy, and affirmation by school leaders and others are given as some of the reasons for job satisfaction.

7. Slightly more than seven-tenths of the Chinese Language teachers saw the advantages of being a teacher and enjoyed working in their present schools and almost eight-tenths were satisfied with their own performance. However, seemingly contradictory, four-tenths would like to change schools, although only one-tenth regretted that they chose teaching.

Weaving the above findings together, the general picture of the Chinese Language teachers is that a large majority of them are satisfied with their job and they have a realistic perception of their social status vis-à-vis other professions requiring similar qualifications. Interestingly, most of the findings are consistent with what international surveys like the GTSI and the SALIS have reported recently. Unique to the present study is that it involved a specific group of teachers, those teaching Chinese Language in Singapore, and not teachers in general.

In view of the outstanding performance of Singaporean students, both primary and secondary ones, in the international achievement comparisons (such as the PISA, PIRLS, and TIMSS), the findings of the present study once again confirm the common belief that satisfied workers are more efficacious and productive.

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Part III
Learners' Language Ability and Its Challenges

Chapter 9
Issue in Bilingualism: English-Chinese Code-Switching Past and Present

Hockhuan Goh and Kaycheng Soh

Code-switching (CS) is a common linguistic phenomenon found in almost any bilingual or multilingual community. This phenomenon means alternation between two or more sets of linguistic codes in a person's utterance during a conversation. Such alternation is not only found in adults' talk but also among conversations of young children. In the past, many studies on CS have reservations over this phenomenon as some researchers viewed it as a manifestation of incompetence or confusion in the two languages. This is still perceived by some language purists and language educators today (Goh et al. 2007). On the other hand, CS is viewed positively by other researchers (Poplack 1980; Genesee 1993; Genesee 2001). They have shown that CS consistently adheres to certain linguistic patterns and this means that it is not a result of confusion or incompetence. Moreover, some research has revealed that children use CS for various communicative purposes, like showing intimacy to interlocutors, differentiating interlocutors who speak different languages, etc. (Al-Khatib 2003; Genesee 2002; Genesee 1993, 2004; Li and Milroy 1995; Poplack 1980; Reyes 2004; Romaine 2004).

Although CS has many years of research, there is to-date little consensus. This lack of consensus is not only a result of the diverse research perspectives of researchers but also of the basis of what researchers considered as a switch. This is reflected in the terminologies that researchers have used to address the phenomenon i.e. *code mixing, code changing, language alternation* and *borrowing* (Al-Khatib 2003; Genesee et al. 2004; Plaff 1997). Other than differences in terminologies, the criteria for what is considered a switch is also diverse. Some researchers have chosen to give CS more specific criteria by restricting it to switch instances of certain physical length, e.g. beyond a word (Poplack 1980; Reyes 2004), or switch instances that bear intentions for discourse or pragmatic purposes (Auer 2005; Li 2005), while

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other researchers set no specific criteria and put all switch instances under the umbrella term of CS or code mixing (Genesee et al. 2004; Romaine 2004).

Previous Studies

CS has been widely studied from many perspectives. Some studies approached it from a social constructivist viewpoint and regarded it as some sort of reflection on the speaker's identity, mirroring societal change or growth that one has undergone in a particular social context (Al-Khatib 2003; Baynham 1993; Kanno 2000). Another set of studies focused on discourse or pragmatic perspectives and regarded CS as a function or conversational tactic in communicative activities among bilinguals (Auer 2005; Li 2005; Reyes 2004). Another key area of research is from the linguistic perspective, which seeks to uncover its nature via descriptive analysis of its frequency, its pattern and the grammatical constraints that govern the phenomenon in bilingual utterances (Dimitrijević 2004; Muysken 1997; Poplack 1980). Other than these perspectives, some studies have also explored the cognitive aspect of CS to reveal the connectedness between the languages of the bilingual (Paivio 1971; Paivio and Desrochers 1980; Paivio et al. 1988; Danan 2006; Sham 2002).

Cognitive Aspect At a theoretical plane, CS is predicated by the assumption that information (meanings) in one language can be accessed via another language and is available in second language when needed. Otherwise, whatever learned in one language is available only in *that* language alone by which it was originally learned, and the two languages of a bilingual person function separately and independently with no possibility of cross-language referencing. Paivio and Desrochers (1980) derived his bilingual dual-coding theory by expanding Paivio's (1971) earlier dual-coding theory which deals with the meanings only of a single language. Paivio (1971) originally proposed that cognitive activity is mediated by two independent but interacting symbolic systems: (1) the imagery system which processes perceptual information and generates mental images and (2) the verbal system which processes linguistic information and generates speech. The two systems are then connected by the reference connector which allows the two systems to interact in both directions. Figure 9.1 depicts the three systems and their relations.

In this model, words (configuration of sounds of a spoken language or strokes of its writing system such as in Chinese) in the sensory system activate verbal representations in the verbal system, and objects (pictures) in the imagery system activate imaginal representations: thus, linking the verbal representation to its image establishes a word-meaning link or the other way round establishes an image-word link. However, the systems work probabilistically, depending on the contexts and past experiences when the connection between word, verbal meaning and image. The probabilistic nature of the link may explain the strength of a connection between a word and its meaning when one is to evoke the other in, for example, recalling the name of a person and his appearance.

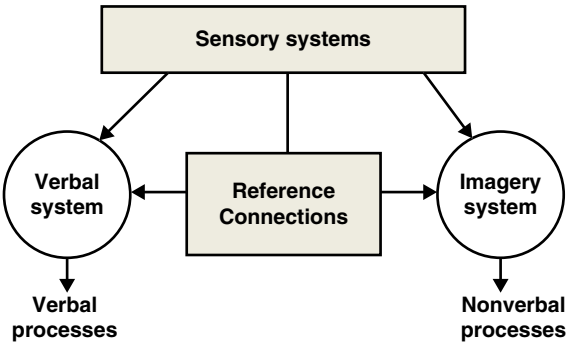

Fig. 9.1 Paivio's dual-coding system

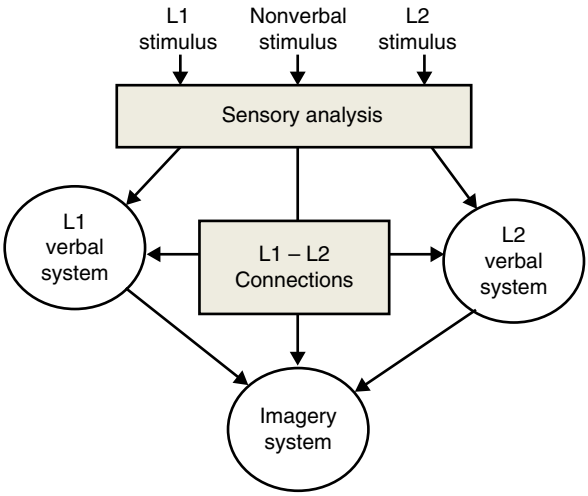

Fig. 9.2 Paivio-Descrochers' bilingual dual-coding model

Paivio and Desrochers (1980) extension of Paivio's original dual-coding theory allows for two languages. In this bilingual dual-coding theory, there are now two independent but interconnected verbal systems both linked to a common imagery system (Fig. 9.2).

In this bilingual model, certain assumptions are made with regard to the independence and inter-connectedness of the three systems:

1. The image systems function independently from the two verbal systems. This extends the assumption of the original monolingual dual-coding theory.
2. The three systems are interconnected at the referential level such that either the verbal system can be influenced by the imagery system or *vice versa.*
3. The two verbal systems have referential connections to the imagery system and are partly shared and partly independent. This implies that (a) a referential overlap between languages is a matter of degree (probabilistic) and (b) the imagery system provides a means of indirect access from one language to the other.
4. The two verbal systems of bilinguals are independent yet partly inter-connected. This implies that, with a change in the language input (or a contextual cue of the nature of the audience), CS can occur.

Ever since the first appearances of the two models with 10 years apart, both theories have received much empirical supports, but criticisms are not totally absent. For a historical reason, there are far more studies on Paivio's dual-coding theory than on the Paivio-Desrochers bilingual dual-coding theory. It is readily recognised that the two types of studies have different orientations. By definition, studies using the bilingual dual-coding theory focus not only on the imagery-verbal connections of meanings but also on the L1-L2 connections across languages such as CS.

In Paivio et al.'s (1988) study, French-English bilinguals freely recalled lists of concrete and abstract words, repeated at different inter-item lags, repeating the same words, translation equivalents or same-language synonyms. The results agreed with previous studies and lent support to the dual-coding theory and also the hypothesis of two independent storages of bilingual memory. Of special interest to the present article are the findings that semantic repetitions through translations (CS) had an additive effect on recall and that semantic repetition effect was weaker for within-language synonyms than for cross-language referencing especially for abstract words.

In a practical way, subtitles of TV or video are assumed to help in the understanding of programme in a foreign language with which the viewers are supposedly unfamiliar. This involves linking images to a language and should support Paivio's dual-coding theory. In a study, Danan (2006) compared the facilitating effect of subtitled video programmes in the learning of foreign languages. Three viewing methods were compared: (1) French audio only, (2) English subtitles and (3) English dialogue with French subtitles. In two experiments, English subtitles were replaced with bimodal input of French audio with French subtitles. Participants who were college students of French at beginners' and intermediate levels were tested on vocabulary recall after watching a five-minute video excerpt in French. The success of reversed subtitling (English dialogue with French subtitles) proved to be the most beneficial condition. This was attributed to translation facilitating foreign language encoding. It was further argued that multiple memory paths created by the visual and bilingual input enhanced retrieval; this is in line with the bilingual dual-coding theory which is the theoretical underpinning of CS.

It is readily appreciated that studies such as those by Paivio et al. (1988) and Danan (2006) involve mainly European languages which belong to the same linguistic family (e.g. French and English) and not with unrelated languages (e.g. Chinese and English). Recently, an interest in pairing English and Asian languages emerges as the number of European learners of Asian languages is on the increase, due to increased political and economic reasons. Since the Paivio-Desrochers bilingual dual-coding theory was developed implicitly for English and related languages, its validity when non-European languages are involved needs to be verified. Although such studies are still few in comparison, more research can be expected in time to come.

Taura (1998, 1996) put the bilingual dual-coding theory to test directly. The study involved 64 high school students (17 male and 47 female with an average age of 15.8) who were bilinguals balanced in Japanese and English and had returned to Japan after having resided in English-speaking countries (including Australia, Canada, New Zealand, the UK and USA). They were presented (via 53 slides) pictures for labelling in English, Japanese words for translating into English and

English words for copying. Without prior warning, the students were tested on recall of the English words. The results are 7.64 (SD 2.39) for labelling, 6.61 (SD 2.23) for translation and 2.06 (SD 1.59) for copying. The effect size for between the first two conditions is Cohen's $d=0.43$, showing a small advantage for labelling over translation. But, the effect sizes for the first two conditions over the third are $d=2.33$ and $d=1.90$, respectively, indicating the advantage of the first two conditions. Of interest to the present study is that translation involving CS, and it is nearly as effective in memory as seeing pictures. Thus, the efficacy of the bilingual dual-coding theory is supported.

In another study conducted in Sydney and Hong Kong involving a non-European language, Sham (2002) paired English and Chinese. Fifth to ninth-graders whose first language or medium of instruction was English but who learned to read Chinese as a second language participated in the study. In one of the experiments, sixth-graders learned to read compounds of two Chinese characters under two conditions: (1) word-and-word presentation and (2) picture-and-word presentation. Note that the first condition evoked the Paivio-Desrochers bilingual dual-coding theory and the second the original Paivio dual-coding theory (for one language). Results show that phonetic compounds were learned better when presented along with their English equivalents (i.e. CS) than when accompanied by a picture of the object represented. In another experiment, Sham (2002) had ninth-graders who learned six concrete sentences and six abstract sentences in Chinese under two conditions: (1) no-picture condition where a Chinese sentence was printed on a card underneath its English translation (i.e. CS) and (2) with-picture condition where a picture was placed above the sentences. Results show the CS (i.e. no picture) conditions better than the with-picture condition. Moreover, the difference between the two conditions was greater for concrete sentences than for abstract sentences. The first finding lent support to the Paivio-Desrochers bilingual dual-coding theory, but the second finding seems to contradict it.

In summary, from the cognitive perspective, the studies have attempted to uncover the underlying principles of CS, and the Paivio's dual-coding theory seems to shed some light on this phenomenon. In principle, these studies found that the two language codes of a bilingual are partially connected and can make cross-language reference without imagery cues. Moreover, they have also found additive effect of language retrieval and recall when subjects are presented with dual-coded testing instruments, though with some contradicting findings. In view of the contradiction, a modified dual-coding model based on the bilingual dual-coding theory for different patterns of reading Chinese as a second language will be proposed in the latter section.

Linguistic Aspect In an attempt to analyse the CS phenomenon, Poplack (1980) incorporated both linguistic and extra linguistic factors into a single analytical model. She derived a set of sophisticated coding scheme to annotate her transcribed data and generated a comprehensive quantitative outline on the CS details and CS tendencies of her 20 Puerto Rican informants, by reporting on the percentage of syntactical categories of CS occurrences found in her data. Besides obtaining this

quantitative sketch of CS, she also attempted to map her findings with the informants' demographic details, e.g. age, educational status and social network, through a language-attitude questionnaire. Syntactically, the study found that there were virtually no ungrammatical combinations of Spanish and English in the CS occurrences of the Puerto Rican informants, and the finding held for non-fluent bilingual informants as well. It was also noted that the informants were more likely to switch larger constituents than smaller constituents. From a pragmatic point of view, she concluded that discourse was a choice of modes that appealed to the speaker in a speech community rather than a choice of language. Once the criteria were met for the discourse mode, the constituent in a sentence was free to switch as long as the switch adhered to the various CS constraints (e.g. equivalent constraint or free morpheme constraint). She also found that speakers who had greater bilingual ability had engaged in more instances of intra-sentential CS, which were deemed traditionally by researchers as trails of language deficiency. She, moreover, observed that true bilinguals, who were learners of both languages since early childhood, most likely produced such intra-sentential CS. Hence, it was concluded that intra-sentential CS is indeed a linguistic performance that requires a high level of linguistic skills in both languages.

Besides, Muysken (1997) also constructed a framework for the CS phenomenon. In his study, Muysken put forward three types of intra-sentential CS, i.e. alternation (CS that involved switches from L1 to L2 with switches in grammar and lexical items), insertion (CS that embedded lexical or phrasal items of L1 into the sentential structure of L2) and congruent lexicalisation (CS for which lexical items from L1 and L2 could be filled interchangeably due to the sharing of an identical grammatical structure between the two languages). He used these types to analyse CS instances presented in various past research papers. In the midst of his analysis, he noted that the differences between the three types of CS might not be clear-cut, for example, longer insertion would result in the imposition of grammatical structure of the inserted language and hence could be also seen as an alternation. Despite illustrating the criteria of the three types of CS, he also attempted to map the CS categories onto the various typologies of societal settings. With these categories, Muysken hypothesised that Alteration was common in societies that had a relatively stable language environment where languages were clearly separated among the bilinguals. Insertion, on the other hand, was common in neo- or ex-colonial societies or the first or third generation of an immigrant society, where languages conformed to one of the dominant language system in the bilinguals. Lastly, congruent lexicalisation was common among the second generation in an immigrant society where languages were accorded almost equal prestige by the bilinguals.

Other than Poplack and Muysken's analysis that comes from the linguistic point of view, the phenomenon of CS had also been explored from the pragmatic perspective, with the intention to understand the social or interaction causes contextualised for CS via conversational analysis.

For example, Li and Milroy (1995) examined CS in a Chinese community in Britain via sequential analysis of their conversations and found that CS had been used by bilingual speakers to contextualise preference organisation and repair their

daily verbal communications. It acted as an additional conversation management resource for bilinguals as compared to monolinguals. Reyes (2004) also incorporated the conversational analysis methodology into his study on the functions of CS among school children's conversation, and he illustrated that children used CS for various functions like clarification and persuasion. As Hammink (2000) summasized, many CS studies pointed out that young children seem to code-switch for adapting to the linguistic abilities of their conversational partners or for using the more readily available lexical items, whereas adults code-switch to emphasise a point, to demonstrate ethnic identity or group solidarity or to exclude individuals from conversation. As children grow older, they adopt the adult's approach to CS. Moreover, younger children under the age of nine favour single-item switch, usually nouns or adjectives, while older children switch with more complex phrases and clauses. In general, these studies show that CS has different functions and these functions are different for adult and child bilinguals.

Apart from international studies, researchers in Singapore have also shown interest in the CS phenomenon. Tan (1988) did an observational study of one family and attempted to map out the CS tendencies of speakers across the family's three generations. It was found that the informants in the study code-switched functionally with reference to conversation topics (i.e. CS is motivated by the topic in conversation; see Tan 1988: 72 for specific examples), situations (i.e. CS is motivated by the degree of formality or intimacy between interlocutors, Tan 1988: 74), repetition (i.e. CS is motivated as repetition of a term for the purpose of clarification or emphasis, Tan 1988: 75), habitual usage of lexical items (i.e. CS is motivated because certain lexical items are habitually said in one code rather than the other, Tan 1988: 77), etc. Other than showing the functions of CS, Tan also found in her study that the informants' CS does not conform to various constraints like phrasal constraint, conjunction constraint, embedded relative clause constraint, equivalence constraint, etc. For example, in the case of phrasal constraint, it is believed that the bonds between the elements of certain phrase structures are unbreakable (e.g. article + noun) and CS will not occur in such phrases' elements. However, Tan found that her informants performed CS in such phrases, e.g. 'a suing (in Hokkien, meaning *box)* so dirty' (Tan 1988: 85), which obviously violated this constraint, as an English article had been strung with a Mandarin noun (for other explanations and examples on other constraints, see Tan 1988: 86–91). Tan's study hence concluded that the various linguistic constraints of CS postulated by many linguists do not hold scientifically in the Singapore context. She believed that general social factors or functions are still the key indicators that trigger CS in Singapore.

Generally, the studies reviewed above uncovered the linguistic and pragmatic aspects of CS. From the linguistic aspect, CS had been found to adhere to certain linguistic constraints which in a way suggested that the phenomenon of CS may not be the result of language incompetence or confusion. From the pragmatic aspect, it was found that CS was used to contextualise preference organisation and repair daily verbal communications so as to carry out various functions, such as clarification and persuasion. Other than studying the functions and constraints of CS, there are indeed attempts to address the concern of CS's adverse effect on language

learning, as CS may indeed be a function of language dominance. For instance, Foo (2011), in Singapore, uncovered the link between language dominance and CS patterns through code-switched nouns and verbs of English-Chinese bilingual university students. Code-switched nouns and verbs showed directionality from dominant to non-dominant language. Although language dominance is a factor that affects directionality, it does not seem to be the main factor. However, the correlation between incidents of CS and language proficiency shows their concurrence, but the causal direction remains a contention as to which causes which. To outline the CS phenomenon in Singapore and further discuss its effect among Singaporeans, a recent sociolinguistic study on CS will be introduced later.

Attitude Aspect There is a plethora of studies on attitudes towards CS appearing in the recent years, especially regarding English-Spanish bilingual programmes in the American context. However, no attempt is made here to make a comprehensive summary of them, but some will be cited for illustrative purpose in support of the argument of this study.

Hammink's (2000) study involved 21 adults and 32 fourth-grade students who spoke English and Spanish and investigated the patterns of CS as well as attitudes towards it. On the latter, the author found the attitudes of adults and students generally were similar although the students tended to be more positive. To some extent, attitudes towards CS tended to be correlated with bilingual proficiency: 69 % of bilingual students considered CS as being friendly (endorsing *It sounds friendly when people mix Spanish and English*), 58 % of monolingual students thought likewise and less than 50 % of adults did so. As for the effect of understanding (endorsing *It is easy to understand a person who mixes Spanish and English*), monolingual and bilingual students were similarly positive (53 % and 54 %, respectively), but adults were slightly less positive (48 %). However, while showing a statistically significant correlation between CS attitude and behaviour for adults ($r = .71$), the correlations are non-significant among monolingual students ($r = .08$) and bilingual students ($r = .45$).

Most recently, Olmo-Castillo (2014) studied the attitudes of teachers towards CS within English-Spanish dual language programme classroom. Based on the results of her survey, the author concludes that dual-language teachers have misconceptions and negative views on heritage language learners' CS within the classroom.

Understandably, much of recent studies on CS have been dealing with the combination of English and Spanish in the American context, especially with reference to *No Child Left Behind.* Note also that the two languages are much more closely linked as compared with the pairing of English and Chinese which Singaporean students learn concurrently right from the first day of formal schooling. In the recent years, more studies on Chinese-English CS emerge, but most involve college students learning English or Chinese as the second languages, especially in the People's Republic of China, involving college students. That is to say, not much research has been done on the issue of Chinese-English CS of primary and secondary students. Some available ones are summarised below.

For instance, Yao (2011) studied the attitudes of in-service teachers (N = 52) and their students (N = 100) in senior classes with regard to teachers using CS as a teaching device in China. Of the teachers, 81 % agreed or strongly agreed that English-Chinese CS enabled them to express more clearly, and only 10 % of the teachers agreed that teachers' CS would cause student difficulty in understanding the teachers. And, 65 % of the teachers *disagreed* that CS would pollute the languages. As for the students, 93 % agreed or strongly agreed that CS enabled teachers to express themselves more clearly, and only 16 % of the students agreed that teachers' CS would cause student difficulty in understanding the teachers. Moreover, 64 % of the students *disagreed* that CS would pollute the languages. In short, both teachers and students held positive attitudes towards CS.

In a similar context, Ma (2014) conducted a study of 58 Chinese undergraduate students' attitudes towards CS in a financial university in the Hunan province of China. They studied English for at least seven years prior to admission to the university, but 44 % of them considered their English was just average. On the question whether it was necessary for the teachers to code-switch in the bilingual classroom, 99 % agreed that they would not be able to understand the teachers nor the textbooks and would lost interest in learning English. However, more than half of the students thought that the teachers should use CS no more than 50 % of the class time. Students considered CS by the teachers proper for explaining the meaning of sentences and when they could not express clearly in English. As for CS among peers, the students' attitude was either neutral or positive. The author concluded that '*findings from the present study are in general accordance with previous studies that suggest CS is beneficial to the efficiency of bilingual courses such as accounting English*' (p. 184). Similar findings have been reported by other researchers who conducted their studies in similar Chinese context (Liu 2010; Xu 2010, Weng 2012).

As rightly pointed out by Wang and Kirkpatrick (2012), the large influx from different countries of Chinese language learners into the People's Republic of China shapes the Chinese language as a foreign language, but how Chinese language teachers decide on their choice of codes remains an under-researched area. The authors studied 24 Chinese language teachers from four universities in Beijing on their beliefs towards CS. Their findings showed that although the teachers made an effort to abide by a Chinese-only principle, English was nevertheless regularly and strategically employed as an international *lingua franca* for explanation, managing and interaction. The authors were critical of the one-size-fits-all Chinese-only policy and suggested that teachers of Chinese language as a foreign language might need to re-examine the policy and develop an alternative pedagogy that allows the use of code-switching in their classrooms in judicious ways. They foresee that the use of CS to English is likely to become even more helpful as the classrooms become increasingly diverse and multilingual. In comparison, this diversification seems to be a trend found in Singapore classrooms albeit at the school level where students are coming from more and varied language backgrounds, both local and from abroad.

As pointed out by Cheng (2013), Singapore, Hong Kong and England and Wales strictly forbid CS in language lessons. The author's study involved 32 English

teachers of Chinese ethnicity attending a teacher training programme in Singapore. They came from 28 different universities throughout China and were teaching in tertiary institutes in China. Of these teachers, 94 % considered their students' underdeveloped English ability as the most significant factor influencing their choice of language in class. At the same time, 65 % of the teachers placed English proficiency as the second most significant factor, and this reflects the belief that English language can only be taught in using it, implying that CS is due to the teacher's own inadequacy. Other factors influencing the choice to or not to code-switch include teaching activities (41 %), rules or policies (38 %) and students' attitude (38 %). Cheng (2013) also reported two main groups of purposes CS was used for: language learning and class management. In the first group are checking comprehension (28 %), highlighting important points (38 %) and teaching grammar and abstract words (695). In the second group are establishing teacher-student rapport (25 %), maintaining class discipline (13 %) and saving time and energy (31 %). The author concluded that CS is an unavoidable phenomenon in Chinese as a foreign language setting, the educational authorities need be aware of this and further research is indicated.

The above studies have shown that there is indeed a change in attitude towards the CS phenomenon in the classroom. Previously, teachers had negative views on language learners' CS within the classroom, and they believed that a language could only be taught using *that* particular language. If a teacher used CS, it was said to be due to the teacher's own inadequacy in the language. In the recent years, teachers and students indeed agreed that CS enabled teachers to express themselves more clearly. Furthermore, both teachers and students have also *disagreed* that CS would pollute the languages. In principle, CS is believed to be beneficial to the efficiency of bilingual courses, especially lending its support for language learning, classroom management and interaction.

In sum, the literature shows that CS is underpinned by bilingual dual coding of a common pool of knowledge or meanings. Overtly, CS seems to be guided by constraints among competent language users and fulfils pragmatic roles or serves communicative functions. Furthermore, CS is, indeed, supported and preferred by teachers and students in the language classrooms.

Study 1: CS of Preschool Children in Singapore (Goh 2012)

In the previous section, we have seen various aspects of CS, and undoubtedly this phenomenon is gaining its importance as a social and pedagogical strategy. However, before further advocacy for its use in the Singapore classroom, there will be a need to understand this phenomenon in the Singapore context and whether such phenomenon can be used. In this section, we shall focus on CS situations among Singaporean children.

To illustrate the CS situation (i.e. from Mandarin to English) in Singapore, this section draws upon data of the Singapore Children Spoken Mandarin Corpus

(SCSMC) which is constructed by the Chinese Language Research Team of the Centre for Research in Pedagogy and Practice at the National Institute of Education. The corpus comprises language data from 600 preschool children. The data mainly comprise spoken Mandarin from 5-year-old children who were engaged in a 30-min one-to-one interview. The interview consists of two parts, a 15-min free talk which is merely a casual talk with the child on topics of his interest, such as classmates, teachers, lessons, cartoons or toys, etc.; then, there is a 15-min picture elicitation whereby pictures of scenes at seaside, school canteen, home and playground were shown to the students to stimulate their Mandarin output. Each child's language output was audio recorded and transcribed into texts with reference to the transcribing convention of SCSMC.

From the corpus, 80 preschool children were chosen based on their home-language background. The home-language background of each child was determined by a survey on his home-language exposure and use, via the Chinese Exposure Index (CEI) that represents the home-language dominance of the child on a scale of −1.0 to 1.0. A negative value of CEI signifies that the child is less Chinese dominant and comes from an English-speaking home, whereas a positive value signifies that the child is more Chinese dominant and comes from a Chinese-speaking home. Four home-language groups were identified based on the CEI and were named (1) predominantly English-speaking homes (PESH), (2) more English-speaking homes (MESH), (3) more Mandarin-speaking homes (MMSH) and (4) predominantly Mandarin-speaking homes (PMSH). With these four groups identified, 20 children were systemically selected at equal intervals along the name list of children in each group arranged in alphabetical order. The transcripts of these selected children are then drawn from the corpus and annotated manually for CS instances. Each CS instance was differentiated for inter-utterance or intra-utterance code-switching to identify the common types of code-switching the children engaged in. The intra-utterance code-switching instance is further differentiated for alternation, insertion or congruent lexicalisation to identify the common type of intra-utterance code-switching. To understand the common grammatical categories being code-switched, the part of speech of each code-switched instance was also annotated for analysis.

Frequency The frequency of CS turns is summarised in Table 9.1 where mean percent of 23.6 (15.0) shows that CS is a common phenomenon among Singaporean Chinese preschool children in their Mandarin communication. This finding is corroborated by some previous studies (e.g. Domingue 1990; Myers-Scotton 1993; Ruan 2003).

As Table 9.1 shows, the PESH group yielded 31 % of CS in their Mandarin utterances, whereas PMSH group produced on only average 17 %, only about half of the PESH. The MESH and the MMSH have 23 % and 24 %, respectively. These indicate a large difference between the two 'prominent' groups but not between the two 'more' groups. Moreover, the correlation between CS frequency and the CEI is estimated as $r = -.310$ ($p < .001$, two tailed), indicating a weak to moderate *negative* relationship between the compared variables. Thus, about one-quarter of the

Table 9.1 Frequency of CS

Groups	Audible turns	CS turns	% of CS	Mean % of CS (SD)
PESH	4459	1305	29.3	30.6 (17.6)
MESH	4608	1032	22.4	22.9 (15.4)
MMSH	5011	1167	23.3	24.1 (13.0)
PMSH	4899	750	15.3	16.6 (10.6)
Total	18,977	4254	22.4	23.6 (15.0)

utterances involve CS. This is indeed not surprising as they were brought up in the multilingual Singapore. Secondly, from Table 9.1, it can be seen that PMSH children produced the least CS in terms of their percentage of CS, whereas PESH children produced the most CS output. As for MESH and MMSH children, their average percentage of CS output is moderate, somewhere in between PESH and PMSH children. This distribution of CS frequency forms a near-linear negative relation between CS frequency and home-language exposure of the informants. Even without a strong relationship, the Pearson correlation coefficient is still significant. Although it is undeniable from the linguistic competence point of view, that CS is displayed suggests some degree of incompetence in Mandarin among the informants. CS can be unarguably understood as the communicative competence of PESH children who overcome their linguistic disadvantage by means of CS. By using another language (i.e. English) that they have acquired, they are able to more accurately express their thoughts and facilitate communication.

Types of Code-Switching CS has often been differentiated in terms of inter-sentential or intra-sentential by researchers (Chen 2009; Muysken 1997; Poplack 1980; Yu 2005). The categorisation differentiates CS instances within or beyond sentence boundaries. However, sentence boundaries of children are relatively hard to define, as children are quite fond of producing utterances consisting clauses loosely conjoined or partially completed. The distribution of these two types of CS among children of different home-language backgrounds is summarised in Table 9.2 which shows that most CS is intra-utterance, 68 % compared with 32 % of intra-utterance CS.

When the two types of CS are viewed against the total audible turns, intra-utterance CS is more frequent than inter-utterance CS (15 % vs. 7 %). These suggest that intra-utterance CS is the prominent type of CS, probably most common among young Singaporean bilingual preschool children.

When viewed across the home-language groups, there are variations. Firstly, the PESH group produced the higher per cent inter-utterance CS (54 %) when compared to those from the other three groups (21–25 %). This is probably due to the extensive utilisation of their English language to support their communication in Mandarin. Secondly, PESH children generally produced fewer intra-utterance CS (46 %) when compared to the other three groups (75–79 %). It is interesting to note that intra-utterance CS correlates with CEI with a negligible $r = -.011$ but there is a

Table 9.2 Types of CS

Home lang.	Inter-utterance CS			Intra-utterance CS		
Groups	Freq	% CS	% Aud.	Freq	% CS	% Aud.
PESH	710	54.4	15.9	595	45.6	13.3
MESH	262	25.4	5.7	770	74.6	16.7
MMSH	240	20.6	4.8	927	79.4	18.5
PMSH	162	21.6	3.3	588	78.4	12.0
Total	1374	32.3	7.2	2880	67.7	15.2

moderate r = −.513 ($p < .001$, two tailed) between inter-utterance CS and CEI. This indicates that while intra-utterance CS is quite independent of the children's home language, inter-utterance CS is negatively related by language used at home.

However, when comparing the intra-utterance CS against audible turns, the percentages of intra-utterance CS (PESH ~13.3 %; PMSH ~12.0 %) between PESH and PMSH children are similar. Their percentage is generally lower than MESH and MMSH children, who produced 16.7 % and 18.5 % of intra-utterance CS among their total audible turns, respectively. This suggests that intra-utterance CS may be prominent among MESH and MMSH informants and PESH and PMSH informants generally engage less in this type of CS. Although having similar percentage of intra-utterance CS, it should be noted that PESH children use fewer intra-utterance CS because they use more inter-utterance CS (i.e. 54.4 % of their total CS turns), whereas PMSH informants use fewer intra-utterance CS (21.6 % of their total CS turns). The low percentage of inter- and intra-utterance CS in PMSH informants is in line with their small percentage of CS in general (a low 15.3 % of CS among their total audible turns, see Table 9.1). From these observations, a trend seems to emerge in terms of the type of CS employed by children from different home-language backgrounds, i.e. for children from PESH background, they tend to use more inter-utterance CS, whereas the MESH and MMSH children use more intra-utterance CS, and PMSH children use the least of both types of CS (though with a preference for intra-utterance CS when they code-switch).

In sum, children from PMSH background generally use more intra-utterance CS than did their MESH and MMSH counterparts. Secondly, children with the least Mandarin exposure (PESH) tend to employ more inter-utterance CS. According to Poplack (1980), intra-utterance CS is a form of language performance that signifies better competence in the dominant language, because intra-utterance CS calls upon a good knowledge of syntactical rules to decide if a switch is permitted in the dominant structure. With children from most of the home-language groups employing similar amount of intra-utterance CS, it is believed that the bilingually exposed MESH and MMSH groups and the most Mandarin-exposed group (PMSH) have attained the basic syntactical rules of Mandarin. With this linguistic knowledge, they are more likely to use intra-utterance CS that allows them to insert words or phrases of English into their Mandarin utterances with ease, so as to compensate their lack of Mandarin vocabulary or expression at the point of speech or help them to more accurately and efficiently express themselves.

Table 9.3 Types of intra-utterance CS

Home lang.	Alternation			Insertion			Congruent lexicalisation		
Groups	Freq	% Intra	% CS	Freq	% Intra	% CS	Freq	% Intra	% CS
PESH	31	5.2	2.4	541	90.9	41.5	23	3.9	1.8
MESH	12	1.6	1.2	746	96.9	72.3	12	1.6	1.2
MMSH	11	1.2	0.9	903	97.4	77.4	13	1.4	1.1
PMSH	1	0.2	0.1	584	99.3	77.9	3	0.5	0.4
Total	55	1.9	1.3	2774	96.3	65.2	51	1.8	1.2

Types of Intra-Utterance Switch To further understand details of the high intra-utterance code-switches in the data, three categories of intra-utterance CS identified (Muysken 1997, 2000) were employed: alternation, insertion and congruent lexicalisation. It can be recalled that alternation refers to the alternation to English clause or phrase which structurally differs from Mandarin, insertion refers to the insertion of English words or phrases without affecting the grammatical structure of the Mandarin utterance and congruent lexicalisation refers to the random interchanging of English and Mandarin words where the utterance conforms to a grammatical structure that is identical to English and Mandarin.

Table 9.3 shows that insertions make up the 96 % of intra-utterance CS. The other two types are relatively rare, with only 2 % alternation and 2 % lexicalisation. Similar readings were also observed when the types of intra-utterance CS are viewed against the total number of CS turns produced by the children. The informants commonly employ insertion when they code-switch (65.2 %), whereas alternation and congruent lexicalisation are rarely used by the informants (alternation ~1.3 %; congruent lexicalisation ~1.2 %). Thus, the children have a strong tendency to insert words or phrases into their Mandarin utterances when CS is employed as their communication strategy.

When viewed across home-language groups, insertion remains the most frequent among all four home-language groups as the percentages are beyond 90 %. However, the insertion among PESH children is the lowest as compared to the other three home-language groups.

This phenomenon becomes more prominent when their insertion is compared against their total CS turn, where insertion only constitutes 41.5 % of their total CS turns. Though lowest in insertion among the groups compared, PESH children used more alternation and congruent lexicalisation CS than the other three home-language groups. Indeed, PESH have the highest percentage of alternation and congruent lexicalisation CS among all four home-language groups, i.e. 5.2 % and 3.9 %, respectively. In short, children who have better competence in Mandarin (from the more Chinese-dominant families, CEI >0.5) tend to insert English words

or phrases into their Mandarin utterance when employing CS in their communication, whereas children with less Mandarin competence (from less Chinese-dominant families, CEI <0.5) tend to alternate to English phrases or clauses or interchanged words randomly between the two languages when they code-switch.

Grammatical Categories It is of interest to examine the common grammatical elements that children code-switch when they speak in Mandarin. The analysis of these common linguistic elements would reveal the common English repertoire that the children draw upon when they are speaking Mandarin. The analysis of what English grammatical elements are used in Mandarin communication will be good indicators in terms of Mandarin curriculum development, as their Mandarin equivalent should be addressed in Chinese language teaching. For this analysis, the categories developed by Poplack (1980) were used, following grammatical categories or word-classes, i.e. nouns, verbs, adjectives, preposition, conjunction and others. The grammatical categories are annotated in each insertion CS turn by percentage.

It can be seen from Table 9.4 that the four most common grammatical categories are nouns (48 %), followed by conjunction (21 %), others (19 %) and then verbs (8 %). Adjectives, adverbs and prepositions have rather low percentages.

When viewed across home-language groups, PESH children switched to use more English nouns (51 %) and verbs (12 %), whereas PMSH children switched to using more nouns (45 %) and conjunctions (38 %). As for the other two home-language groups, they have more CS for nouns and conjunctions, but they also have slightly more switches for verbs like their PESH counterparts.

When content words (i.e. nouns, verbs and adjectives) and function words (i.e. conjunctions, prepositions and adverbs) were examined, two trends were observed. Firstly, children who came from more English-speaking homes are more dependent on their English for content words as compared to children from more Mandarin-speaking homes (67 % PESH, 61 % MESH, 56 % MMSH and 51 % PMSH), whereas children from more Mandarin-speaking homes are more dependent on their English repertoires of function words (10 % PESH, 18 % MESH, 26 % MMSH and 38 % PMSH). These trends show that children from MESH may be short of basic building blocks (i.e. the vocabulary of content words) when expressing in Mandarin, whereas children from MMSH are short of conjoining materials (i.e. vocabulary of function words). Examples are shown in Table 9.5.

In the examples above, the diversity of CS for noun, verb and adjective items generally reflects certain lexical gaps in the children's Mandarin lexicon. This gap

Table 9.4 Common linguistic content of CS

Groups	Ins CS	Noun	Verb	Adj.	Conj.	Adv.	Prep.	Others
PESH	595	50.9	11.8	3.9	6.9	2.4	0.7	23.5
MESH	770	47.5	9.5	4.0	14.8	1.4	1.6	21.2
MMSH	927	47.0	6.7	2.5	24.8	0.2	0.6	18.1
PMSH	588	44.9	4.4	1.4	37.9	0.0	0.0	11.4
Total	2880	47.5	8.0	3.0	21.1	0.9	0.8	18.7

Table 9.5 Examples of common linguistic content code-switched

	Words being code-switched
Nouns	Auntie, apple, Bukit Batok, bus, favour, foodcourt, hawker centre, NTUC, power, rabbit, restaurant, sausage, shopping, Star Cruise, tissue paper, UNO, wall, zebra
Verbs	Carry, celebrate, find, hook, moving, poke, push, stay, stretch, stuck, take
Adjectives	Brown, chubby, cute, deep, easy, invisible, long, messy, orange, purple, poisonous, smelly
Conjunctions	If, but, and
Adverbs	Then
Prepositions	After, near, on, to, under

is indeed not surprising because children's lexicon at this age (or even anyone's at any given age) is bound to lack certain lexical items. What is worth noting here is that children (and only bilingual children) are able to overcome such gaps by drawing on lexical items in their alternate language resource (English). Another point to be noted, according to our observation, is that proper names for specific referent and local context have contributed partially to the high percentage of CS for nouns. This is because such terms are usually conveyed in the daily Singaporean life in English and their Mandarin equivalents are rarely known and used, for example, UNO, Garfield, Star Cruise, NTUC, etc.

Generally speaking, the findings on common CS linguistic contents show that content words like nouns, verbs and adjectives are grammatical categories that children switch in their Mandarin utterance. Among them, nouns have the highest tendency of being code-switched. This is probably not surprising as names of things are usually the largest group of words that a language learner has to conceive, and hence when the children are unable to name the things in Mandarin, they will try to seek alternatives in their other language to fill the lexical gap. Besides content words, we also found that function words like conjunction and conjoining adverbs are second in position among CS of the children. As noted in Goh (2012), the use of these words is linked to the descriptive or narrative task that the child is engaged in. It can be believed that such CS not only signifies the lexical gap of equivalent terms in their Mandarin lexicon but also involves the application or combination of conjoining words in both Mandarin and English to fulfill the particular descriptive task.

Summary All in all, the above findings show an undeniable relationship between CS and home-language background.

1. There are more CS instances from the two 'prominent' groups (PMSH and PESH).
2. More English-speaking children used *inter*-utterance CS more frequently, while the More Mandarin-speaking children produced more *intra*-utterance CS in their Mandarin communication. In addition, More English-speaking children used slightly more alternation and congruent lexicalisation CS than their Mandarin-speaking counterparts.

3. More English-speaking and More Mandarin-speaking children differ in their use of common grammatical categories. PESH children switch to use mostly nouns and verbs, whereas the other three groups switch to use mostly nouns and conjunctions.
4. The correlations between CS and home-language exposure indicate that Singaporean children, when speaking in Mandarin, code-switch to English to a certain extent and this may not be entirely due to deficiency in their Mandarin but probably a reflection of their bilingual cognition.

The implications of the findings for language teaching in the Singapore classroom are discussed later.

Study 2: Dual-Language Coding (Soh 1985)

As the learning of a foreign or second language, especially English and Chinese, has become a worldwide trend, a better understanding is useful of the processes involved in bilingual dual coding (Paivio and Desrochers 1980; Soh 2010a). It is also useful to find out how CS is influenced by moderator variables such as home-language background. Within this context, the study re-analyses and reinterprets data collected for a different purpose (Soh 1985). Taking the imagery-verbal connection for granted, this secondary analysis focuses on the connection between the two verbal systems and attempts to answer the following questions:

1. Among bilingual school children, to what extent are meanings learned in one language available in the other language at the word, phrase and text levels?
2. To what extent the abilities to code-switch at the phrase and test levels depend on the proficiency at the word level?
3. To what extent are the abilities in two languages correlated? And, to what extent the abilities to code-switch are correlated?
4. Which linguistic forms are easier to code-switch than others?
5. How are primary school students supported in their learning of the auxiliary (second) language?
6. To what extent do the students use their auxiliary language in the family and with peers?

It is believed that answers to these questions will be useful to designers of language curricula, language teachers teaching in a bilingual environment, assessment specialists developing language tests, parents who wish to see their children growing up bilingually and, of course, researchers interested in bilingualism.

Prior to the introduction in 1979 of the New Education System (Goh 1979), Singapore had two main types of schools. The Chinese schools were established and financed by the Chinese community with basically China-oriented curriculum. All subjects were taught by using Chinese, while English was taught as a standalone subject. Later, these schools obtained governmental grants and became

government-aided schools. On the other hand, the English schools were established by the then colonial government and later continued to be government schools after Singapore's Independence in 1965. In these schools, all subjects were taught using English, with Chinese as a stand-alone subject. There was a short transition period when efforts were made to integrate the two types of schools with the emergence of the integrated schools which housed an English Stream and a Chinese Stream under one roof. As time passed by, there was the need to fully unify the two Streams leading to the implementation of a national curriculum with emphasis on English, and all subjects except Chinese language were taught by using English, with some exceptional variation in terms of Civic and Moral Education.

Method

Students involved in the study were from two Chinese schools and two English schools. These schools were all above the national averages in the Primary School Leaving Examinations for the three years prior to participation. A total of 213 Primary 3–5 students were from the Chinese schools, and a total of 221 Primary 3–5 students were from the English schools. Admittedly, these students formed two convenience samples and no representativeness is claimed.

When assessing bilingual students on their proficiencies in their two languages, the convention is to test them using two different tests which not only differ in language but also in content. The students' bilingual ability is then inferred from comparing their performances on the two monolingual tests. A consequence of this monolingual approach is that the students are prevented from making use of what they have learned in the other language and there is no cross-reference between the languages, although they might do this covertly and subconsciously. Another consequence is that their performances in the two language tests are constrained by the different test content and, therefore, any observed difference in the two performances is an interaction between the test language and test content but not language ability alone. Such confounding by test content in a language test makes the interpretation uncertain as to the proportions of variances accounted for by the language and the content. This is a subtle point always overlooked in language assessment where the content effect is tacitly assumed to have been controlled. This leads to an underestimation of the correlation between abilities in the two languages.

In this study, a different approach to the assessment was adopted. This was achieved by using the same content for the various tests and only allowed the languages to vary among the different versions. Figure 9.3 shows the way the tests were derived.

As Fig. 9.3 shows, when a test has both its items and options in the same language, two conventional monolingual tests resulted, one for Chinese and the other for English. These monolingual tests are the conventional language tests but with the context effect controlled. When items and options are in different languages, two bilingual tests resulted, one for Chinese-English switch and the other for English-Chinese switch, again, with content effect ruled out.

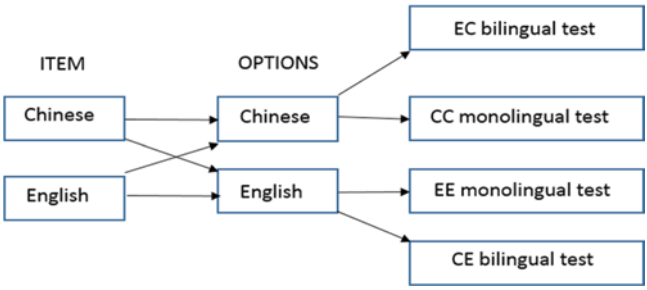

Fig. 9.3 Combinations of languages in test design

Kong Wah and Ali are _____. They always play together.

a) 兄弟

b) 姐妹

c) 朋友 *

d) 亲戚

Fig. 9.4 A sample item from the English-Chinese bilingual test

When a student takes the bilingual tests, he is faced by a question in one language (say, Chinese) but has to switch to another language (in this case, English) to evoke the correct answer in his mental lexicon from among the given options. If the meaning learned in one language is not available in the other language, he would not be able to find the correct answer. It is therefore argued that such bilingual tests are needed to actually assess the students' bilingual ability *bilingually* and the score thus obtained is a better measure of bilingual proficiency without the confounding of test content.

A sample item from the English-Chinese bilingual test is shown in Fig. 9.4. As shown therein, the item stem is in English and the options are in Chinese. Here, *Kong Wah* is the name of a Chinese boy and *Ali* that of a Malay. The options in Chinese characters mean (a) *brothers*, (b) *sisters*, (c) *friends* and (d) *relatives*. When answering this question, the student needs to infer from the item stem in English that they are friends and then code-switch to Chinese to look for the corresponding word (朋友). If the student understands the question but is unable to code-switch, the four options in Chinese will not be of any meaning to him, and he cannot answer correctly. Likewise, for the same item in the Chinese-English bilingual test, the process of CS is reversed.

Each of the four word tests has 65 multiple-choice items. The same approach of bilingual testing was applied at the phrase and text levels, though with lesser items.

There are 20 items for the bilingual phrase test, with 10 requiring English-Chinese CS and 10 Chinese-English CS. There are 10 items in the bilingual text test, with half of the items requiring English-Chinese CS and the other half requiring Chinese-English CS.

Analysis

Data for the monolingual and bilingual word, phrase, and text tests as well as the student survey were treated statistically by using appropriate analytical techniques which suited the nature of the data. As the students studied here did not form random samples of their respective populations, the use of the inferential *t*-test would violate the basic principle of its use as hence was avoided. Instead, group comparisons were made by using the descriptive effect size in terms of standardised mean difference (SMD) with the formula below and interpreted with reference to Cohen's (1988) criteria: 0.0–0.2, negligible effect; 0.2–0.5, small effect; 0.5–0.8, medium effect; and, 0.8 or above, large effect.

$$\text{SMD} = \left(\text{Group 1 mean} - \text{Group 2 mean}\right) / \text{Standard deviation}$$

Results

Word Tests Table 9.6 shows the performances on the monolingual and bilingual tests for the English and the Chinese groups of students. As shown therein, the English stream students scored practically equally well on all four tests, being able to answer correctly about 71 % of the 65 items of each test, on average. Their means for the two bilingual tests indicate that they were correct on 70 % of the items, and this suggests the extent with which what they knew in one language was available in the other language.

The Chinese Stream students' performances varied more among the four tests, with lower means when the tests involved English. Specifically, they were able to answer correct 59 % of the English-English monolingual test, 72 % of the Chinese-Chinese monolingual test, 58 % of the English-Chinese test and 64 % of the Chinese-English test. This pattern suggests that English set a ceiling especially when the questions were first encountered in English. Nevertheless, their performances on the two bilingual tests suggest that they were able to code-switch and thereby evoked the meanings of words across languages quite substantially.

When the two groups were compared on their means by way of effect size (SMD), the results show that they differed only slightly on the Chinese-Chinese test. This is somewhat surprising as it was expected that the Chinese stream students did better than did the English stream ones.

Table 9.6 Means and standard deviations for word tests

		English-English		Chinese-Chinese		English-Chinese		Chinese-English	
Group	N	Mean	SD	Mean	SD	Mean	SD	Mean	SD
English	221	46.5	9.37	47.5	9.01	45.3	10.48	46.4	10.96
Chinese	214	38.4	13.27	47.1	8.29	38.1	12.24	40.7	12.62
Difference		8.1		0.4		7.2		5.7	
Effect size		0.71		0.05		0.63		0.48	

On the other three tests involving English, the English Stream students did better than did the Chinese stream students as would be expected, since this is the latter groups' weaker language. The mean difference varied from 5.7 (Chinese-English) to 8.1 (English-English). The means for the two bilingual tests also suggest that it was easier for the English stream students to switch from Chinese to English more than the other way round, although the mean difference is small. Nonetheless, the three effect sizes are of a medium to large magnitude in favour of the English stream students.

Of special interest to this study are the performances on the two bilingual tests of the two groups of students. Three points are worthy of mention. First, as can be seen from Table 9.6, the English Stream students seemed to be more adept at Chinese-English switch than at English-Chinese switch, but the SMD = 0.10 shows there is actually a trivial difference. Secondly, the Chinese Stream students tended to be more adept at Chinese-English switch than at English-Chinese switch (SMD = 0.21), but this is only a small effect. Thirdly, while the English stream students were more adept than the Chinese stream students at both directions of CS, the SMD = 7.2 for English-Chinese switch is greater than the SMD = 5.7 for Chinese-English switch, indicating that it was easier for the English stream students to code-switch from English to Chinese than the other way round.

Phrase Test As shown in Table 9.7, the English stream students scored 75 % of the 20 items of the phrase test, whereas the Chinese Stream students scored only 60 %. The SMD = 1.45 indicates a very large effect. Since all items of the phrase test involved English, that the Chinese stream students (who were generally weaker in English) did not do as well as their English Stream counterparts is not surprising.

It is reasonable to expect phrase test performance to depend on the performance in monolingual word tests, since the ability to function at the higher levels of phrase is logically dependent on lexical knowledge. Table 9.7 shows the correlation coefficients which suggest that the English Stream students relied on their English and Chinese abilities to the same extent when taking the phrase test. However, the Chinese Stream students depended much more on their English ability than on Chinese ability when taking the phrase test.

Text Test As shown in Table 9.8, the English Stream students scored 75 % of the 10 items of the text test, whereas the Chinese Stream students scored only 64 %. The SMD = 0.51 indicates a medium effect size. Like the phrase test, since all items

Table 9.7 Means, standard deviation and correlations of phrase test

Group	N	Phrase test			
		Mean	SD	r (P-EE)	r (P-CC)
English	212	15.1	1.56	0.650	0.630
Chinese	176	12.2	2.44	0.567	0.337
Mean difference		2.9			
Effect size		1.45			

Note: *E* English, *C* Chinese, *P* phrase test

Table 9.8 Means, standard deviation and correlations of text test

Group	N	Text test			
		Mean	SD	r (T-EE)	r (T-CC)
English	212	7.5	1.96	0.605	0.508
Chinese	176	6.4	2.39	0.598	0.413
Mean difference		1.1			
Effect size		.051			

Note: *E* English, *C* Chinese, *P* phrase test, *T* text test

Table 9.9 Intercorrelations among word tests

Group	N	EE-CC	EC-CE
English	221	0.895	0.902
Chinese	214	0.598	0.889
Combined	435	0.761	0.896

Note: *E* English, *C* Chinese

of the text test involved English, the Chinese Stream students (who were generally weaker in English) did not do as well as their English Stream counterparts is not unexpected.

It is reasonable to expect text test performance to depend on the performance in monolingual two word tests, since the ability to function at the higher levels of text is logically dependent on lexical knowledge, not to mention knowledge of grammar. As the correlation coefficients in Table 9.8 suggest, the English Stream students relied on their English ability more than their Chinese ability when taking the text test. The same tendency was found for the Chinese Stream students. Note that the correlation coefficients are both lower for the Chinese Stream students than they are for the English Stream students. This indicates that the ability to code-switch at the text level was less predictable for the Chinese Stream students.

Correlations As shown in Table 9.9, the correlations between the two monolingual word tests are r=.90 for the English Stream but only r=.60 for the Chinese Stream students. When the groups are combined, it is r=0.76. These correlations are on the high side when seen against some studies. For instance, in China, Jiang (2011) reported r=.55 between English and Chinese proficiencies and even lower

with TOEFL reading (r = .24). In a review by Yamashita (2002) of five articles appearing from 1989 to 1999, correlations between L1 and L2 comprehension vary between r = .17 and r = .64. One plausible explanation is that the two monolingual tests in the present study have the same content. Thus, comparing the r = .90 of this study and r = .64 of Yamashita, content accounts for 40 % variance difference.

Secondly, the correlations between the two bilingual word tests are very high: r = .902 for the English Stream students, r = .889 for the Chinese Stream students and r = .896 when the two groups are combined. This pattern of correlations suggests that the students were able to code-switch with high efficacy by evoking meanings learned in one language using the other language. This supports the basic tenet of the present study that cross-language referencing is not only possible but also instructionally beneficial. Similar results were found for the phrase and text tests, although the effects are not as prominent as the word test, due mainly to the differences in test lengths.

Linguistic Forms The four word tests each consist of words of different linguistic forms. There are 15 nouns, 17 verbs, 17 adjectives, 10 pronouns and 6 adverbs. Shown in Table 9.10 are the per cent scores for the bilingual tests obtained by the English Stream and Chinese Stream students. For the English Stream students, CS from English to Chinese was easiest for nouns, followed by adverbs and then verbs, but adjectives and pronouns were most difficult. The pattern varied slightly when switching from Chinese to English. However, the ranks correlate with a correlation rho = 0.9 between the two patterns of ease in CS. To some extent, this pattern, especially for nouns and verbs, is consistent with those found by Hammink (2000) and Foo (2011) cited earlier.

For the Chinese Stream students, the pattern of ease in CS is the same as that for the English Stream students for the English-Chinese bilingual test, and the same is true for the Chinese-English test; hence, the rho = 1.0.

Home Support

It is a forgone conclusion that home support plays an important role in children's language acquisition. This applies to the development of the first language and perhaps is even more important for the learning of second language. To find out how the students were supported for language learning, they were asked questions on specific behaviours of their mothers with regard to the auxiliary language at home. Understandably, mothers play a more prominent role in children's language development (hence mother tongue), and the survey focused on them.

Auxiliary language here refers to Chinese for the English Stream students and, correspondingly, English for the Chinese Stream students, since the languages are the 'second languages' in their respective curriculum then, i.e. before the implementation of the unified national curriculum in which English is administratively labelled as the first language and Chinese the second language.

Table 9.10 Per cent scores for linguistic forms

	English stream		Chinese stream	
	E-C test	C-E test	E-C test	C-E test
Nouns	82 (1)	86 (1)	72 (1)	78 (1)
Verbs	77 (3)	82 (2)	69 (3)	70 (3)
Adjectives	71 (4)	72 (4)	63 (4)	64 (4)
Pronouns	61 (5)	63 (5)	56 (5)	53 (5)
Adverbs	81 (2)	81 (3)	71 (2)	73 (2)
Correlation	0.90		1.00	

Note: Figures in parentheses are ranks based on the per cent scores

Twenty Yes-No questions were asked about the mother's specific behaviour which might have an impact on the students' learning of the auxiliary languages. The survey results were presented in Table 9.11.

When the two groups of students were combined, there are seven maternal reinforcing behaviours which had endorsements of around 70 % or more. As gathered from the first seven items in Table 9.11, the mothers supported their children by some forms of metacognitive strategies such as reminding, requesting, scolding, praising, enquiring, involving and allowing TV watching. These are followed by some indirect engagements with 50 % or more (items 8–13). These supposedly intensified the students contact and use of the auxiliary languages and have some element of being social in nature. The remaining items were endorsed by 50 % or less, and these are cognitive in nature, including asking questions, reading of storybooks and newspapers and assisting in homework, in the auxiliary languages.

When the two groups of students were compared, they differed on 10 items, nine in favour of the English stream students and one the Chinese stream students. Thus, the English Stream students had greater support for learning Chinese than did the Chinese Stream students for learning English. The items for which differences were found spread over the whole range of endorsement. It appears that the English stream students generally received greater home support than did the Chinese Stream students. This could well be a factor leading to the better performances in CS tests of the English Stream students as reported earlier on the various tests (Tables 9.6, 9.7, 9.8, 9.9, 9.10, and 9.11).

Use of Auxiliary Language

Although the adage of '*Practice makes perfect*' may not be true for all learning, it surely is for language learning. Common sense and empirical evidence both suggest that language as skills (versus language as knowledge) can be perfected only by regular use. It is therefore useful and interesting to find out how often the students used their respective auxiliary (second) language with family members and peers.

As Table 9.12 shows, for the English stream students, their auxiliary language (Chinese) was used by 49–71 % in communication with parents and siblings. On the

Table 9.11 Home support for auxiliary language

Does your mother do this?	All students	English stream	Chinese stream	Diff.	Chi-square	p
1. Tells you that Chinese/English is important	88	81	95	−14	21.627	Sig.
2. Tells you to learn more Chinese/English	86	84	89	−5	1.906	NS
3. Scolds you for getting poor marks in Chinese/English tests	80	78	82	−4	0.802	NS
4. Praises you for getting good marks in Chinese/English tests	77	88	65	23	32.146	Sig
5. Asks you what you do in Chinese/English lessons	74	81	67	14	3.073	NS
6. Asks you about Chinese/English words on signboards	74	69	80	−11	5.842	NS
7. Lets you watch TV programmes in Mandarin/English	73	78	68	10	4.524	NS
8. Allows you to listen to Mandarin/English programmes over the radio	64	74	54	20	18.518	Sig.
9. Tells you to make friends with people/pupils good in Chinese/English	64	66	62	4	0.900	NS
10. Tells you to read Chinese/English storybooks	59	66	51	15	12.074	Sig
11. Takes you to the cinema to see Mandarin/English pictures	56	65	47	8	13.239	Sig.
12. Tells you to borrow Chinese/English storybooks	52	61	43	18	13.260	Sig.
13. Asks you to write something in Chinese/English	51	68	34	34	47.610	Sig.
14. Asks you how to say something in Mandarin/English	50	60	39	21	17.857	Sig.
15. Asks you to read Chinese/English newspapers	48	66	30	36	52.939	Sig.
16. Gives you Chinese/English storybooks	41	46	36	10	3.774	NS
17. Helps you to do your Chinese/English homework	38	39	36	3	0.168	NS
18. Tells you not to make friends with pupils poor in Chinese/English	20	16	24	−8	4.258	NS
19. Teaches you to sing Mandarin/English songs	19	26	12	14	12.994	Sig.
20. Asks you to sing Mandarin/English songs for her	14	13	15	−2	0.166	NS

Notes: (1) This version was for the English stream students to whom Chinese was the auxiliary language. (2) All chi-squares were calculated with d.f. = 1, and the critical value is 6.635 for statistical significance at the $p = .01$ level

Table 9.12 Use of auxiliary language with family members

	English stream %	Chinese stream %	Difference	Chi-square	p
Student to mother	68	46	22	20.36	Sig.
Mother to student	65	39	26	28.62	Sig.
Between parents	49	36	13	7.19	Sig
Student to siblings	68	65	3	0.41	NS
Siblings to students	71	61	10	4.57	Sig
Among siblings	68	65	3	0.41	NS

Note: Percentages are for those who endorsed v*ery often* and s*ometimes* combined

Table 9.13 Use of auxiliary language with friends

	English stream %	Chinese stream %	Difference	Chi-square	p
Student to school friend	85	41	44	90.25	Sig.
School friend to student	81	45	36	57.74	Sig.
Among school friends	60	43	17	13.28	Sig.
Student to home friends	71	50	21	21.50	Sig.
Home friends to student	70	51	19	15.52	Sig.
Among home friends	66	53	13	7.240	Sig.

Note: Percentages are for those who endorsed *very often* and s*ometimes* combined

other hand, for the Chinese stream students, English (their auxiliary language) was used only by 36–65 %. The differences vary from as little as 3 % to as much as 26 %. Four of the six chi-square tests results are statistically significant. In short, in the family, the English Stream students used Chinese much more often than did the Chinese Stream students use English. The greater differences are found with the parents, and this may be caused by the parents' language and education backgrounds. Such difference can be expected to have an influence on the students' abilities and motivation in the two languages as well as the ability to code-switch.

As Table 9.13 shows, for the English Stream students, the auxiliary language (Chinese) was used by 60–85 % in communication with peers. On the other hand, for the Chinese Stream students, English was used by only 41–53 %. The differences vary from as little as 13 % to as much as 44 %. All six chi-square test results are statistically significant. Thus, the English Stream students used Chinese much more often than the Chinese Stream students used English. The tendency is that the greater differences are found with friends in school than with friends at home. This indicates that the English Stream students got more practice of the auxiliary language in school than did the Chinese Stream students. The same condition prevailed in the home environment as well, though somewhat less. Again, such difference can be expected to have an influence on the students' abilities and motivation in the two languages as well as the ability to code-switch.

Summary With reference to the research questions mentioned earlier for this study, the findings are summarised as follows:

1. The above findings point to a considerable overlap in the meaning learned between the two languages of bilinguals. This cross-language overlapping is too sizeable to ignore and is consistent with the Paivio-Desrochers bilingual dual-coding theory.
2. The abilities to code-switch at the phrase and text levels do depend on the proficiencies in the two languages. However, for the English Stream students, language proficiencies at the word level contribute to around 40 % of the ability to code-switch at the phrase and text levels. For the Chinese Stream students, it is about 15 %. It stands to reason that without word knowledge, understanding of CS at the phrase and text level will be difficult.
3. The correlations between the bilingual measures are very high, indicating shared variance between 79 % and 81 %. As alluded to above, there is considerable overlap between English and Chinese proficiencies at the word level. The extent of such overlap is much greater that usually found in the pertinent literature. This finding of considerable overlap between English and Chinese deserves greater attention than it has been accorded to and has instructional implications.
4. CS is not of equal ease for different linguistic forms. In spite of the stream of the students, nouns and verbs, and perhaps adverbs, are easy for CS, whereas adjectives, pronouns and prepositions are harder. This finding in partial echoes with Goh (2012), as he also found that nouns and verbs are most commonly code-switched; however, Goh did not find significant CS for adverbs but instead found higher CS for conjunctions. This finding of high CS for nouns and verbs is to be expected as some linguistic forms are encountered more frequently and more concrete than others.
5. Parents are generally supportive to their children's learning of auxiliary languages. However, they are able to provide indirect support (such as reminding children to learn and emphasising the importance of learning) but are less likely to give direct support in the learning process. Parents of the English Stream students are more supportive than those of the Chinese Stream students.
6. A problem of second language learning is the linguistic discontinuity between the school and the home. It is a common sense that when a language learned at school is also spoken at home, there is a continuity that makes the two experiences mutually reinforcing. Thus, the language learning in the contrived environment of school is reinforced by the more natural language acquisition at home, resulting in higher proficiency. The absence of such a favourable condition could well be the root cause of the problem of learning a second language.
7. The English Stream students used the auxiliary language (Chinese) with their mothers more than do the Chinese Stream students. The difference in the use of the auxiliary language with siblings is much less between the two streams. At the same time, the English Stream students used the auxiliary language with their school friends much more often than do the Chinese Stream students. The difference in the use of the auxiliary language with friend at home is much less between the two streams. The interaction of students with their siblings provides an additional platform for practising the language in a personally meaningful way. These two conditions are found to be more available to the English Stream

students than they are to the Chinese Stream students, thus contributing to the differences between the two groups repeatedly found in the analysis of test and survey data of this study.

Implication for Teaching Chinese Language in Singapore

Thus far, this chapter has attempted to present the CS phenomenon of Singaporean children with a new perspective. From the international literature, it has been shown that CS is not simply code confusion or language deficit, it holds certain pragmatic functions and it indeed follows certain underlying cognitive principles (such as Paivio's dual-coding theory and the Paivio-Desrochers' bilingual dual-coding theory). From the two local studies presented here, it has been shown that Singaporean preschool and primary children's CS has strong relationship with their home-language exposures. More important is the two languages of Singaporean Chinese children are indeed related in their mind, although linguistically they are considered as being quite different, belonging to different language families.

Generally, the value of the present article lies with providing a historical as well as more current perspective which enables a comparison of the past and the present with a view to the possible future. It is a worthwhile effort to take a retrospective look at what was found happening in the past and try to foretell what can and need be in the future. As illustrated above, it has been noted that sizeable commonality exists between a bilingual pupil's two languages and that a bilingual pupil can code-switch with reasonable ease from one language to the other. This has implications for bilingual curriculum and instruction methodology. Perhaps, what ought to be added to these are implications for assessment and training of language teachers.

Curriculum Design To capitalise on code-switching for more effective teaching of Chinese language, especially to students who do not speak the language at home, there is a need to ensure coordination between the curricula of the two languages. This was suggested by Soh (1985: 101). In terms of curriculum materials, this indicates the need to develop *correlated* language syllabuses by taking into consideration the communality between languages as well as language-specific structure and the need to identify non-linguistic content which can be conveniently coded into two languages. Traditionally, language curricula (syllabuses) for languages, even in a bilingual education system like that of Singapore, are designed by specialists for their respective language independently of any other language. To maximise the benefit of code-switching, the two languages need be coordinated to some extent.

Admittedly, beyond vocabulary, the linguistic content may be more difficult to coordinate, as each language has its own sequence of learning when some learning points need to precede others and the patterns may not be the same for the two languages. However, the coordination of the nonlinguistic content should be easy. Linguistic content cannot be learned without the non-linguistic content serving as the vehicle and has to be nested in chosen topics. As long as the topics for writing

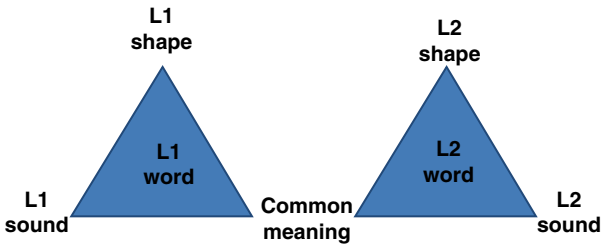

Fig. 9.5 Shared meanings between languages

language texts are within the cognitive level of students, any topics will do. Thus, at the least, language curricula for the two languages need to overlap to a large extent. This enables CS to be employed for effective language teaching, by which the students need not learn the nonlinguistic content all over again; all the teachers need to do is to evoke the relevant concepts of chosen words in the first language and help the students to learn the new labels for the concepts. As depicted in Fig. 9.5, the process of learning new words can be a shortcut by capitalising on the common meanings shared between two languages (Soh 2010a), leading to more efficient learning and less frustration for the second language learners. By capitalising on accessing word meanings across languages, learning process can be short-circuited and thereby save time and energy.

A word of caution, though, if the two language curricula overlap too much as to become almost identical in non-linguistic content, boredom may set in to make the learning of the second language so monotonous that it detracts than attracts. Besides, for the teaching of Chinese in the Singapore context, the inculcation of Chinese culture and values is a second objective. For this, there must be room reserved for this objective. Moreover, some cultural concepts and values may just have no equivalents in the other language (English) or may be so difficult to translate where CS is not feasible. Thus, the coordinated curricula should not be an exact translation of the other.

Language Instruction Language teachers naturally use the language they are trained to teach and avoid using another language in their lessons. They do this, maybe, to maintain a professional identity of being teachers of a particular language and to comply with the directive to stay within it since their countries may have rules regarding the use of a different one in language lessons. What then can they do when explaining new or difficult words? If the word is a label of an object, the teacher may use its actual object, drawing or photo to illustrate. If the word refers to an action, the action may be demonstrated. In such cases, cognitively speaking, the teachers use cross-modal *translation* from verbal input to visual input. If the word is an abstract concept, then, many other words may be used. In this case, the new word is *translated* into more elaborated and presumably simpler and known words or concept, i.e. the dictionary method.

This last method can be problematic as the words and concepts used for explanation (*translation*) may not be actually simpler or better known to the students. For example, 尴尬 (awkward) is explained as 处境困难 (difficult situation) and 不好处理 (not easy to handle) and倔强 (stubborn) as 刚强不屈 (strong-willed and unyielding) in a dictionary commonly used in Singapore. Here, the students are assumed to know already such words as 处境 (situation), 处理 (handle), 刚强 (strong-willed) and 不屈 (unyielding). The problem is that the students are probably as unfamiliar or even more so with these 'explaining' words as those they are to explain. In Chinese language textbooks, such verbal explanation is a regular feature, and students are expected to remember the word meanings and will be tested. It is obvious that this within-language dictionary approach adds to the problem of learning more than solving the problem.

However, CS can help and the students can learn faster. This can be achieved by (1) the teacher referring to English equivalents, (2) the students using a bilingual dictionary or (3) the teacher demonstrating to the class using Google Translate. Students are more likely to know already such English words as *awkward* (尴尬) and *stubborn* (倔强), and the problem is solved immediately by referring to the students' past knowledge already learned in English. Two additional advantages of this bilingual approach via CS are that (1) there is less frustration to both the students and the teacher and (2) instruction time is used more economically. Not capitalising on CS, the teachers deprive themselves of a useful and even powerful tool for solving the word-meaning problem of language teaching. And, as implied by the findings above, this approach can also be applied to the phrase and test levels, perhaps to a less degree because of the more complex nature of phrases and texts.

Of course, the teachers need be cautioned not to overdo CS lest the lessons become translation lessons which serve a totally different purpose. The teachers need to be able to discern when to and when not to code-switch. This requires the teachers to be familiar with the students' language proficiencies in the two languages and also with the two language curriculum, especially if a coordinated one is available. Thus, teachers can wisely mix the within-language approach and CS according to the demands of the learning situations. However, code-switching need not be the last resort used only when other methods have been exhausted and failed. On the contrary, it can be the first-line attack of the problem, capitalising on the students' language background and past learning.

Language Assessment Bilingual students' abilities in the two languages are traditionally assessed by two different language tests which usually differ in content and format and are likely to have been designed by different teachers. With such differences, the relationship between the students' bilingual abilities would have been underestimated. When the students take the two monolingual tests, they are not required to make use of the other language. As has been suggested (Soh 2010b, 2012), the results of such assessment do not necessarily indicate the students bilingual ability since the languages function independent of each other rather and not interactively.

Chinese Language teachers need to continue designing and administering monolingual Chinese tests. This provides them with information needed for the evaluation of the students' progress in the learning of Chinese and diagnoses their learning difficulties. They also need to beef up their assessment literacy so that they can do his part of their professional responsibilities with deeper understanding and greater efficiency.

Over and above monolingual testing, the Chinese Language teachers can also design Chinese-English bilingual tests, all by themselves or, better, in collaboration with English Language teachers. Doing this will enable the teachers to find out how well students are able to use what they have learned in one language to answer questions posed in another. The information will help the teacher adjust her use of CS in subsequent lessons.

Assessment has a motivating effect in the Singapore context where assessment is taken very seriously (perhaps, too seriously); taking bilingual tests will encourage English-speaking students to use CS as a language learning strategy to enhance their learning of Chinese, especially where word meanings are concerned thereby strengthening their vocabulary. Bilingual tests will help the students see that the two languages are related and not unrelated as always assumed to be.

Implication Teacher Training As a corollary of bilingual curriculum, teaching and assessment, bilingual teachers are needed. Ideally, the teachers should be balanced bilinguals who can function with ease in both languages. This however does not seem to be an imperative conditions; as long as the Chinese Language teachers are sufficiently proficient in English, they should be able to make reference to English in the course of instruction. And, this seems to be the case of the younger generation of Chinese Language teachers.

Admittedly, those comments cited above were made in the context 30 years ago when the Chinese Language teachers themselves were once Chinese stream students and bilingual ability was hard to come by. Therefore, the bilingual approach to teaching Chinese language might not be practical on a reasonably large scale and had to wait. Now, 30 years have passed and the situation is different. The younger generation of Chinese Language teachers came out from bilingual education system and are facile in both languages, and some are even more proficient in English than Chinese while having sufficient mastery of Chinese to be teachers. Thus, it is reasonable to suggest that the time is ripe for the bilingual approach involving CS to teach Chinese language, especially to those students who come from English-speaking homes and find learning the language not only a chore but also a bore. By having bilingual Chinese Language teachers teaching, the students will find learning Chinese not so out of sync with their daily life and can learn more effectively, leading to better attainment and stronger motivation.

Although the condition nowadays is more favourable for the bilingual approach to teach Chinese, certain actions are needed in terms of teacher training. Firstly, Chinese Language teachers need be convinced that the bilingual approach involving CS will help solve some learning problems, especially benefiting students from non-Chinese-speaking homes. Moreover, so doing is consistent with educational

principles of making good use of students' knowledge and ability with regard to language learning. Thirdly, they need guidance to make judicious decisions regarding when and to what extent CS can be used to maximise the benefit so as to avoid inadvertently turning Chinese Language lessons into English or translation lessons. Fourthly, they need be familiarised with the coordinated language curricula, when available, so that they know well beforehand in which topics of the language texts CS is possible and beneficial to their students.

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Chapter 10
Teaching Chinese Culture in Singapore Schools

Kaycheng Soh

In the traditional concept of Chinese Language teaching, it is a common belief of teachers that every language lesson carries with it a responsibility of cultural and moral education. This is succinctly summed up in the conventional saying that "*an essay a vehicle of virtue*" (文以载道) and in the equalizing of morality with essay (道德文章). This belief was so ingrained in my teachers that, during my own schooling days, almost every Chinese language lesson ended with a discussion on "*what moral values has this lesson taught us?*" This moralizing approach to language teaching was later questioned and forsaken due to the new literary movement in China (Wang 2015). However, in the recent years, it has made a return, though with less emphasis on morality, when the value of culture to language teaching is recognized, ironically, not by teachers of Chinese but Western languages (e.g., Peck 2015) who believe the teaching of culture should become an integral part of foreign language instruction.

As a matter of fact, the Chinese Language syllabuses for Singapore schools have all the time stipulated the teaching of culture as an objective, albeit secondary to language competence. Below are extracts from Chinese Language syllabuses for the various levels of Singapore schools:

For the primary students (MOE 2015a: 9):

> Humanistic quality should be inculcated in the students. It helps them to learn positive and optimistic emotion and characters, including values, Chinese culture, social consciousness, caring attitude, and global awareness.

For the secondary students (MOE 2011: 16):

> To raise humanistic quality by inculcating the right values and positive attitude toward life, learning about and inheriting the good Chinese culture, caring about the family and the society, loving the country, and being concerned with the world.

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For the secondary (Special Program) students (MOE 2015b: 3):

> Culture and language are closely knit and this programme includes Chinese culture as its element, enabling the students to comprehend the Chinese culture while understanding learning to use Chinese language.

For the junior college students (MOE 2012a: 6):

> After the completion of H1 Chinese Language programme, the students should be able to (1) elevate their characters and cultivate positive values;(2) care about the family, the society, and love the nation; (3) are knowledgeable about and have inherited the good Chinese culture; and (4) are concerned with world affairs and have acquired global awareness.

Besides the regular Chinese Language curriculum, pre-university students who are highly proficient in the language can elect for the *China Studies* (Ministry of Education 2007). This subject is available at the H1 and H2 levels. The aim of this elective is to familiarize the students in four aspects: (1) society and culture, (2) governance and power, (3) development and challenges, and (4) China and the world, focusing on the social and political developments of China since 1978. There are also four Language Elective Programme (Chinses) Centres offering a two-year programme which provides a wide range of learning activities to enhance the students' writing skills and interest in the learning of Chinese language.

Culture in Language Textbooks

Although differently phrased, *Chinese culture* appears consistently throughout from the primary to the junior college levels. In short, Chinese culture is stipulated as part and parcel of the Chinese Language programs.

With Chinese culture set as a goal, albeit secondary, for the teaching of Chinese, what has been attempted to achieve it? Traditionally, culture can be taught as content in language lessons. As pointed out by Apple and Christian-Smith (1991), curriculum and textbooks are the "vehicles of ideas" which are designed to serve the purpose of the government's "standards of being a good citizen." Thus, it is natural that the valued part of a culture is built into the curriculum and actualized through the textbooks.

As there are more than culture to be taught in a language programme, the proportion of culture-based lessons is an indicator of how well the programme caters to the need of teaching culture. For example, Wu (2011) analyzed the themes in Chinese Language textbooks for the fifth and sixth grades published and in use during the period 2006–2009. Each lesson of the textbooks was coded as falling into one of 11 categories, and the results are shown in Table 10.1.

However, one may not totally agree with Wu's classification. For instance, local cultural specifics, legendary stories and virtues, or character-building lessons and even role models may be traced to Chinese culture for their origins in view of the common cultural base of the four countries. If this is granted, it may then be argued that the percentages of culture-based lessons in the four countries' reading textbooks

Table 10.1 Percentages of lessons in reading textbooks by topic

	China	Hong Kong	Singapore	Taiwan
Chinese traditional culture	2	5	2	11
Local/cultural specific essay	7	9	2	11
Legendary story	0	4	6	0
Nationalism/patriotism-related text	16	4	15	0
International culture	7	5	6	6
Virtue/character building with life lessons	20	25	34	29
Role model	9	7	2	5
Developing one's ability in learning	12	14	23	6
Developing a static taste (e.g., nature, art)	17	11	2	16
Global (postmodern)issue	5	8	2	8
Other topics	5	8	2	8
Total number of lessons	116	76	47	76

Source: Wu (2011, Table 2: 76)

Table 10.2 Correlations

	China	Hong Kong	Singapore	Taiwan
China	1.00	**.67**	**.66**	.54
Hong Kong		1.00	**.77**	**.86**
Singapore			1.00	.46
Taiwan				1.00

Note: Coefficients in bold are statistically significant ($p < .05$, two-tailed)

are 38 % for China, 50 % for Hong Kong, 46 % for Singapore, and 56 % for Taiwan. Such high percentages are not surprising as the four countries have traditionally given much emphasis to cultural values and their inculcation.

It is interesting to note that the relative emphasis placed on the topics is correlated with varying degrees. There are statistically significant correlations among China, Hong Kong, and Singapore, while Taiwan has a significant correlation (and the strongest at that) only with Hong Kong. In other words, in the four countries where Chinese language is taught, there are similar patterns of emphasis (Table 10.2).

In Singapore, Ng (2015) analyzed four sets of Chinese language textbooks in use for the period 1979–2007. Table 10.3 shows the percentages of Chinese language lessons having content related to traditional cultural values.

As Fig. 10.1 shows, over time, with the exception of primary 4, all the other levels have increased the percentages of culture-based lessons in the Chinese Language textbooks. This, of course, reflects the increased emphasis placed on Chinese culture in Singapore's primary Chinese Language curriculum.

As the school has, somewhat cynically, been dubbed the "museum of virtues," this formal approach of teaching culture (and values) through language texts will most likely continue as doing so ensures that what is intended to be taught is taught.

Table 10.3 Percentages of culture-based lessons in Chinese language textbooks

	1979	1993	2002	2007
Primary 1	4.2	30.0	56.3	43.3
Primary 2	37.5	35.0	40.6	50.0
Primary 3	44.4	30.6	47.5	40.0
Primary 4	75.0	40.6	55.0	15.0
Primary 5	27.5	16.7	34.4	58.3
Primary 6	37.5	34.4	50.0	65.0

Source: Ng (2015, Table 4: 16)

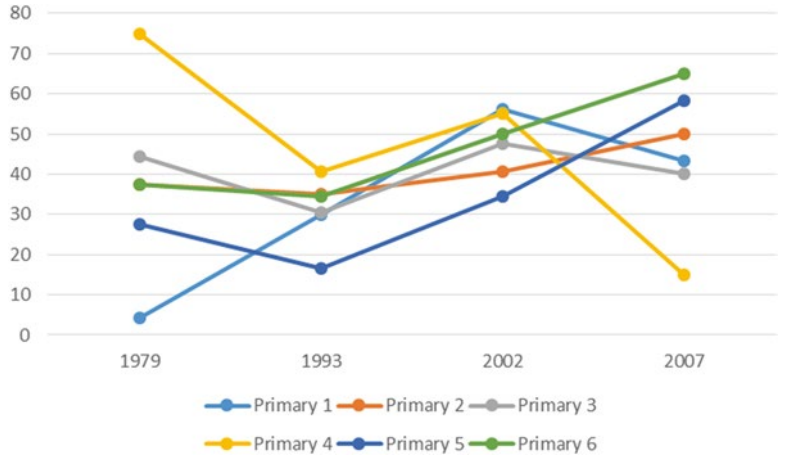

Fig. 10.1 Trends of emphasis on culture-based Chinese language lessons

Co-curricular Activities

Co-curricular activities (CCAs) are a venue through which Singaporean students learn Chinese culture. CCAs are an integral part of the students' holistic education through which students discover their individual interests and talents while developing social values and competencies. Participation in CCA fosters social integration and deepens students' sense of belonging, commitment, and sense of responsibility to school, community, and nation. There are four broad groups of CCAs which cater to the students' varied interests and talents: (1) clubs and societies, (2) physical sports, (3) uniformed groups, and (4) visual and performing arts.

Of the four options, the fourth (visual and performing arts) is most closely related to Chinese culture. This includes Chinese orchestra and ensemble, Chinese calligraphy and painting, Chinese dance and *wushu* (martial arts), and Chinese literature and drama. Although official statistics are not available as to the number of these organized cultural activities, it is assured that many ethnic Chinese students are actively involved in the culture-based CCAs in one form or another.

Of course, the school policy plays a critical role in promoting these cultural activities. For instance, the Special Assistance Plan (SAP) schools at the secondary level can be expected to be much more active than the other schools since the establishment of the SAP schools has the mission of preserving and promoting their Chinese quality or character (Ministry of Education 2012b).

While these activities are regularly conducted, there are also occasional activities such as Chinese *chadao* (tea ceremony), Chinese festival celebrations (e.g., the Mid-autumn or Mooncake Festival, the *Duanwu Jie* or Dumplings Festival), *xiansheng* (cross talk, humorous dialogue), and *jianzhi* (paper cutting) which bring to the students' awareness some aspects of the Chinese culture.

The regular and occasional cultural activities are normally conducted not by the Chinese Language teachers in the schools but by instructors and presenters from outside the school, often through the connection with the National Arts Council. As can be expected, most of the instructors and presenters are artistes from China.

Immersion in China can be considered as a regular form of CCA related to Chinese culture. This comes under the scheme of Overseas Exchange Programme though not limited to China as a location for this activity. In a broader context, the Ministry of Education recognizes that an overseas experience presents rich learning for students and such an experience helps students develop confidence, independence, and responsibility through immersion in a different cultural environment and interaction with people of diverse backgrounds. It also broadens the students' worldview and helps them to be at ease in a different cultural setting (Ministry of Education 2014). On average, about 100,000 students participate in various types of overseas learning journeys. The expenses are partly met by the fund provided by the government through the Edusave Scheme, launched in 1993. The aim of the exchange programme is that all students, from primary through secondary to junior college will have at least one such overseas trip in their school career.

As can be expected, for ethnic Chinese students, the large cities of China such as Beijing, Shanghai, and Nanjing are more popular places for visitation. Gradually, other cities of China such as Chengdu and Xian are becoming favorites, too. Typically, Singaporean students on an overseas trip to a China city will have close interaction with their Chinese counterparts and immerse totally in a Chinese social and physical environment where everything is Chinese.

Admittedly, to what extent the CCAs have produced the effect of acculturation in the students awaits systematic and objective evaluation. Nonetheless, the CCAs are conducted with good faith that they will influence the students in their outlook and attitude as far as the Chinese culture is concerned.

Teaching of Culture

In terms of educational taxonomy, culture has three separate but related domains: (1) cognitive, (2) behavioral, and (3) affective. The cognitive domain of culture covers the cumulative knowledge and wisdom, very often manifested through

artifacts of historical significance. The behavioral domain of culture has to do with the shared patterns or habits of behaving, manifested through customs, festivals, and celebrations. The affective domains deal, more subtly, with the feeling of fondness and belongingness and, most abstractly, cultural identity. The three domains are similarly referred to as products, practices, and perspectives (Dema and Moeller 2012, citing ACTFL 1999).

In a discussion on bringing culture into Chinese Language classrooms in an American context, Christensen (2009) defines culture thus,

> When we hear the word "culture", most people automatically think of the great achievement of a civilization or people…things such as art, architecture, literature, religion, history, philosophy, and so on (p. 20).

The author then went on to cite Hammerly (1985) who named such culture as *achievement culture* and *performance culture*. This is similar to the products of the ACTFL. It was pointed out that achievement culture and performance culture are not as applicable to learning a foreign language as what Hammerly called *behavioral culture* which is the daily common practices and beliefs in a specific society. To Hammerly, behavioral culture includes

> Such common things as eating habits and manner, the manner of greeting, the protocols of travelling by public transport, how to conduct a transaction at the bank, how to order a meal in a restaurant, how one treats siblings, parent–child relationships, teacher-student relationships, how emotions are displayed, and how gifts are exchanged…(Hammerly 1985 cited in Christensen 2009)

In a practical sense, when a student is steeped in the Chinese culture, he will think, behave, and feel in the Chinese way over and above mastery of the language for effective communication. With this view, it is safe to say that ethnic Chinese students in Singapore schools learn mainly the achievement or performance cultures of the Chinese people (i.e., the "high arts" of China) more than the behavioral culture as defined by Hammerly above.

With the three domains in view and considering what has been described above, it may be safely said that the teaching of Chinese culture in Singapore schools focuses mostly on the cognitive domain. Students learn quite a bit of knowledge about Chinese values, arts, artifacts, and festivals through the textbooks and CCAs. The learning of the relevant knowledge and skills are further reinforced by some forms of competition and presentation, for instance, the nation-level Central Judging of Chinese Orchestras and school-based public performances in concerts. However, the effects in the behavioral and affective domains of culture learning remain to be systematically and objectively evaluated.

Cognitive learning of culture by students may serve the function of preserving and subsequent transmission of cultural knowledge and artifacts, but this may not be the most important and ultimate aim of such learning. With the modern technologies, preservation and transmission of cultural knowledge and artifacts do not necessarily need to have student involvement; students need not be turned into storehouses of culture, and electronic or digital devices can do a better job at that. Cognitive learning as such is in fact to be used as a vehicle by which the relevant values and habits

of behaving are to be developed in the students. In this sense, cognitive learning of culture lays the intellectual foundation or rationale for the development of, in Dema and Moeller's (2012) terms, practices and perspective. Cultural knowledge and artifacts are means and not ends. Therefore, a criterion for evaluating the success, or the lack of it, of culture learning is whether the students behave and feel in the ways commensurate to the culture's dictates. In a practice sense, how students think and feel *after having learned the cultural knowledge* is the criterion of successful acculturation, not how much they know or how well they out-perform others.

Teaching Language through Culture

In the recent years, many advocates suggest that because of the close link between language and culture, foreign language instruction will be more effective if it has a cultural element built into the learning materials and processes (e.g., Neff and Rucyniski 2013; Sun 2013; Peck 2015). In their view, culture is the *fifth skill* (Vernier et al. 2008) to learn in language programmes. The reason for this is that *not* knowing the cultural component of language is problematic, causing misunderstanding and misinterpretation. For instance, Chinese use "Have you eaten?" as a starter of conversation and not a question of eating habit, and British use "What's up?" for the same purpose without really expecting a definite answer.

The origin of this language-culture relation can be traced back to the linguistic determinism, or the Sapir-Whorf Hypothesis, of the early part of the previous century, for which colour names and kinship terms are typically cited as supporting evidence. For example, such terms as *uncle*, *aunt*, and *cousin* are generic in English to include both paternal and maternal relatives, but each of these has not only separate paternal and maternal terms but also different terms for elder and younger positions in Chinese, e.g., *bobo* (伯伯) for elder paternal uncle, *shushu* (叔叔) for younger paternal uncle, and *jiujiu* (舅舅) for maternal uncle disregarding seniority. The subtle divisions in Chinese kinship terms can be a source of confusion and learning difficulty to Singaporean students who learn the two languages concurrently right from the first day of schooling (or even in preschool).

Recently, and interestingly, Boroditsky (2010), professor at Stanford University specialized in cultural psychology, cited "Humpty Dumpty sat on a …" to illustrate how the same event needs to be expressed in different manners in different languages such as English, Russian, Turkish, and Indonesian. The author further cited an example from Pormpuraaw (a remote Australian Aboriginal community) where the language does not have position terms like *left* and *right* and a person may have to warn his friend by saying "There's an ant on your *southwest* leg." Experiments showed speakers of different languages associate position and time differently; for instance, Mandarin speakers placed cards of future events below those depicting past events, and Aymara (South America) speakers placed future behind and past in front. These seem to confirm the argument of the early Middle Ages king Charlemagne (a.k.a. Charles the Great) that *to have a second language is to have a second soul*.

In the context of Singapore where ethnic Chinese students learn English and Chinese for at least 10 primary and secondary years, there are ample opportunities to encounter confusions between the languages causing learning difficulties simply because they have different ways of expression. And, if the advocacy of teaching culture together with language is correct, then Singaporean students perforce need not only be bilingual but also *bicultural*.

In the Singapore context, again, teaching culture together with language has an additional advantage to the learning of Chinese, which is a subject standing alone in the whole curriculum and taking up not more than 20 % of instructional time. This means students have 80 % of the time for learning and practicing English language. This being the case, the lack of time for practicing Chinese (i.e., using and applying) may be a main cause of difficulty in learning leading to lower-than-desired attainment, although an analysis of the PISA data shows that time is not necessarily the only or even major detrimental factor (Soh 2014). A possible side effect of this limitation is that students have difficulty in seeing the usefulness of Chinese and the reason for learning it.

The CCAs described earlier can add to the learning of Chinese, although this may not be the original intention of introducing the Chinese-based activities. When students are engaged in the Chinese-based CCAs, they are engaged actively in doing *things Chinese*, and it is natural to use Chinese language to communicate among peers and with the instructors. They will learn about the historical, aesthetic, and technical aspects of the CCAs and learn to make comments and requests using Chinese and also, maybe incidentally, pick up relevant terms and thereby enrich their Chinese vocabulary and expressions. Thus, the Chinese-based CCAs provide additional opportunities of using and learning Chinese over and above learning to perform the musical and artistic skills. Indirectly, this enables the students to see one usefulness at least of Chinese language.

Admittedly, the current practice of CCAs is quite independent of the more formal learning of Chinese language in the classroom, since the Chinese Language teachers normally take charge of administrative matters with the aesthetic and technical left entirely to the visiting instructors. In this case, the CCAs have little to do with the curriculum and are in actuality ECAs (Extracurricular Activities), although the name has long been replaced. This implies that ways and means need be found to turn the ECAs into CCAs in its real sense. And, understandably, this calls for careful alignment between the Chinese Language curriculum and the Chinese-based activities, re-orientation of the teachers and instructors to see their respective roles and possible contributions to Chinese language learning, and development of coordinated learning materials (e.g., Chinese musical terms for students in the Chinese orchestra, etc.).

Conclusion

Singapore's students learn Chinese culture through textbooks where a high percentage of the text has relevant content. Over the years, there has been an increase of culture-relevant texts at the primary level. Students also have been actively engaged in Chinese-based co-curricular activities beyond the confines of the classroom. Moreover, they have the opportunity to participate in immersion programs which take them to close contact with students in a few major cities in China. All these directly and indirectly afford the students with the opportunity to learn about Chinese culture. However, these practices seem to be based largely on faith more than facts, as education has always been, and will continue. Therefore, there is a need to systematically and objectively evaluate the impact of such culture learning, not so much to prove it works but to get information that will enable it to work even better.

Cognitive learning of Chinese culture, while equipping the students with cultural knowledge and familiarizing them with Chinese cultural artifacts, is not the ultimate goal of the various efforts. It is more important that, having so learned, the students develop the behavioral and affective aspects of Chinese culture – the *practices* and *perspectives* which are consistent with Chinese values and customs. A better balance can be attained by devoting more attention and time to the teaching of *behavioral culture* through both textbooks and CCAs as this type of culture has social significance and daily application. In a sense, the teaching of Chinese culture needs to become a bit down-to-earth, so to speak, and avoid focusing almost exclusively on the "high arts."

It is foreseen that by paying more attention to the cultural aspects of Chinese language teaching, the efficiency of language learning can be enhanced since, as the cultural language advocates posit, there is a close link between culture and language or there is cultural basis of language. It is further argued that the teaching of Chinese culture needs be more closely aligned with teaching Chinese language, not only to enhance proper understanding of the language but also to endow Chinese language more time for its use or practice in real-life activities outside the classroom; the by-product of so doing will be a sense of usefulness of the language in the eyes of the students. In other words, it is believed that Chinese-based CCAs provide a golden opportunity for effective and motivated learning of Chinese language and therefore need to be systematically maximized.

Finally, a word of caution: Singapore being a multi-ethnic/multi-cultural society, the teaching of Chinese culture to ethnic Chinese students should avoid the risk of inadvertently creating cultural exclusiveness (Chauvinism) as an unduly strong in-group view and feeling are undesirable in a society like that of Singapore. A preventive measure is to teach some aspects of the other ethnic groups' cultures, especially the behavioral culture. In fact, this has been done to some extent in, for instance, the school's celebrations of the major ethnic groups' festivals to promote mutual understanding and respect among students of various ethnicities. Nonetheless, there can never be enough of the good will, and racial harmony cannot be taken for granted.

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Chapter 11
Epilogue

Kaycheng Soh

Forecasting what may happen in the distant future is futuristic; predicting what should happen in the near future is crystal gazing. The articles of this volume may be somewhere in between the scientific and mysterious foresights. In this sense, all the articles deal with what has happened in the past of the teaching of Chinese Language in Singapore and what can be made to happen in the next decade or so. Admittedly, in each article, there is a mixture of objective facts, of the recent past and the present, and personal views, hopes, and aspirations. Cutting through all the discourse is the common concern for and interest in effective teaching of Chinese Language in Singapore schools. This is close to the heart of all the authors who, before becoming researchers at the Centre, have been Chinese Language teachers themselves and are in regular contact with practitioners in the school.

This volume is not meant to be a collection of strictly academic discourse on current status and issues of the teaching of Chinese Language in Singapore, but a presentation of informed views and wishes of a small group of practice-oriented researchers intimately and conscientiously working for the improvement of Chinese Language teaching in Singapore's complex language environment.

It is generous of them to so willingly share their experience and foresights regarding the teaching of Chinese Language in the Singapore context. Although all authors are on the payroll of the Centre, the arguments put forward in their respective articles are their personal views and do not necessarily coincide with those of the Centre as a research and training organization, as this volume is published independent of the Centre with the authors contributing as individual scholars.

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It is indeed a great pleasure to have the opportunity to preview the articles as a privilege of a book editor. The editorial work was made easy by the enthusiasm and cooperation of the authors. Hopefully, this volume serves as a milestone on the long journey of improving Chinese Language teaching in Singapore, and, surely, there will be more to come.

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