

# Chapter 6

## Dynamic Enrichment Learning Mode: A New Way to Facilitate the Learning of Chinese as a Second Language in the Mainstream Curriculum



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**Abstract** In Hong Kong, the issue of teaching Chinese as a second language (CSL) to school children is receiving considerable attention in recent years due to the trending proportion of CSL students in classrooms. While the Hong Kong Government encourages the integration of these students into mainstream schools in which the medium of instruction is predominately Chinese, the inadequate support provided puts these school aged children in a disadvantaged position. In light of this, there is a need of developing effectual interventional strategies to support the CSL learning of these students at preschool, primary and secondary levels. This chapter introduces a new support mode, the Dynamic Enrichment Learning Mode (DELM), which has been specifically developed for an intervention programme for promoting CSL students' proficiency in Hong Kong kindergartens. Pre-test and post-test data were collected from 146 CSL kindergarteners aged 4 to 5 years who received DELM activities (DELM group) and compared to that of 110 CSL kindergarteners of the same age group who learned Chinese by merely learning in an immersion setting (immersion group). Findings show that the DELM is more effective in promoting CSL kindergarteners' overall Chinese proficiency levels when compared to an immersion setting.

**Keywords** Chinese as a second language · Early childhood education · Early language and literacy · Curriculum development

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## 6.1 Introduction

With China's fast-growing economy, Chinese has gained its status as one of the most popular second languages worldwide. This has given rise to an interest in the research on the teaching and learning of Chinese as a second language (CSL). The topic of CSL acquisition has also received a lot of attention in Hong Kong in the past decades. While the majority of students studying in public schools are ethnic Chinese, there is also a sizable population of ethnic minority (EM) students who have a pressing need to learn CSL in order to survive in classrooms in which the medium of instruction is mostly Chinese.

In the past decade, the Hong Kong Government launched a series of measures, such as the abolition of "designated schools" and the introduction of the "Chinese Language Curriculum Second Language Learning Framework" to encourage the inclusion of CSL learners in conventional schools for their better integration into the society in the future. Provisions of supports extended to kindergarten level in 2016. However, consistent with many countries with a high number of immigrants due to globalization, the trending number of second language (L2) learners in mainstream classrooms has resulted in challenges to both teachers and students to an unprecedented extent. Due to a huge disparity between home and school language and the lack of exposure to Chinese, these students coming from diverse cultural and linguistic backgrounds often have low proficiency in Chinese and lag behind their L1 peers in academic performances (Loh & Tam, 2016). At the same time, teachers constantly feel perplexed about how to cater for a group of students with mixed experience and abilities (Loh et al., 2020).

These issues are even more salient at kindergarten and preschool levels because of the nature of early childhood education programmes, insufficient supports and young learners' incomplete development in language skills (Tse et al., 2013). Curricula in Hong Kong kindergartens, by and large, adopt an integrative content approach (Loh & Tse, 2012; Tse et al., 2015), where contents are organized by themes rather than the sequence of the linguistic stages of both first and second language development. As such, the programme of study may vary school by school and lack a centralized second language syllabus. This is similar to trends in early childhood curricula in many parts of the world where the emphasis is placed on students' all-round development rather than language development alone (Baker & Wright, 2021; Björklund et al., 2014; Cekaite & Evaldsson, 2017; Heydon, & Wang, 2006). While holistic programmes may help support children's overall development, it has been suggested that, in order to promote L2 acquisition, language targets and instruction should be systematic and carefully planned (Baker & Wright, 2021; Fortune, 2012; Genesee, 1994).

Other than an appropriate curriculum, educational settings in which L2 instruction is delivered may also determine minority students' L2 development. Currently, the most widely adopted settings for CSL students in mainstream schools in Hong Kong are the pull-out and immersion modes, both of which have their advantages and shortcomings. Although there has been extensive research on these instructional settings for enhancing these students' L2 proficiency as well as performance in other

academic areas in the international context, little research has been carried out to examine their effectiveness in promoting young CSL students' L2 development and how these settings may affect emergent CSL learners in Hong Kong.

Learning experience children undergo in their early years has a deep-rooted and enduring impact on their development and likelihood of success (Office of Early Childhood Education, 2018). Thus, there is an urgent need of developing effective pedagogical strategies, support mode as well as an L2 curriculum with well-planned learning targets to support CSL students' progressive development in Chinese proficiency, especially at preschool level.

In view of this, this chapter proposes the adoption of Dynamic Enrichment Learning Mode (DELM), which was specifically developed for an intervention programme for CSL kindergarteners in 2015 and has been implemented in partnership kindergartens. Based on theories of Second Language Acquisition (SLA) and the Integrative Perceptual Approach (IPA), interactive language enrichment activities developed by the team adopting the DELM draw on the advantages of both pull-out and immersion modes so as to allow these students to learn in an inclusion setting while also receive CSL enrichment tailored to meet their unique needs. The study in this chapter aims to answer three main questions:

1. What is DELM and how it can overcome the limitations of immersion and pull-out modes in L2 teaching and learning?
2. How can DELM be implemented in an integrated preschool curriculum?
3. Why DELM is considered suitable for the learning of Chinese as a second language in multicultural young learners?

In the following, we will first review the literature on two of the common modes of educational setting in supporting L2 students—the pull-out and immersion, and consider their practicability in the Hong Kong kindergartens with reference to challenges faced by young CSL learners. In the second part of this chapter, we will introduce the DELM, explain its underlying theoretical framework and illustrate how it can be implemented in an integrated preschool curriculum. We will also provide evidence on its effectiveness through comparing EM students' CSL proficiency after receiving intervention under DELM and immersion settings.

## 6.2 Literature Review

### 6.2.1 *Pull-Out Approach*

The pull-out mode, also known as the pull-out approach or model, is one of the most prevalent types of educational programmes for second language learners (Thomas & Collier, 2002; Loh et al., 2020). Under this type of educational setting, L2 students

learn about content areas in mainstream classrooms most of the time but are occasionally “pulled-out” from their classes to receive instruction with a main focus on enhancing these learners’ L2 proficiency (Ellis, 2007).

Several studies pointed out the advantages of the pull-out model from perspectives such as overall classroom atmosphere and interaction patterns (Carter, 1984; Pearson, 2015). Carter’s report on *The Sustaining Effect Study* highlighted some advantages of the pull-out model (1984). First of all, a pull-out classroom could create an affirmative learning environment for students that allowed students to learn in smaller groups with higher teacher-to-student ratios, thus more attention can be allocated for each student. The atmosphere of pull-out classrooms was often more amicable and lessons were usually more well-planned (Carter, 1984). These conditions are perhaps more favourable to L2 learning as they allow learners to receive more assistance that may help to lower the affective filter, which is the emotional block that holds L2 learners back from language acquisition (Krashen, 1985). It has also been noted that the pull-out settings enabled teachers to focus more on adjusting their teaching for a particular group of students according to their cultural backgrounds and characteristics (Pearson, 2015).

However, the mode of pull-out has received a lot of criticisms due to their insignificance on improving L2 literacy and their failing to provide equal educational opportunities to the minorities (Thomas & Collier, 2002; 2017; Jakubowski & Ogletree, 1993). Thomas and Collier (2002) regarded this model as being “the least effective and the most costly”. Other criticisms on the model include its labelling effect, the reduction of instruction time on other subjects and teachers’ low expectations on pull-out students (Carter, 1984; Thomas & Collier, 2002). Moreover, this kind of pull-out approach contradicts with what Snow et al. (1992) and Krashen (1985) have suggested that language is best learned through receiving plentiful and comprehensible exposure in purposeful social and academic contexts. In this regard, the pull-out setting does not seem to provide the ideal circumstances for second language development.

The research so far on pull-out seems to indicate that the approach brings more disadvantages than advantages. Nonetheless, the undesirable outcomes could be caused by factors such as the inadequacy of planning and communication other than the setting itself (Ferguson, 1992). While the pull-out mode might not be the optimal approach for promoting L2 development and social integration, it is, however, one of the most accessible solutions in many countries (Ferguson, 1992).

### 6.2.2 *Immersion Approach*

Immersion is another type of popular educational setting for supporting L2 learners. The meaning of the term “immersion” varies by geographical location, contexts and policies (Baker & Wright, 2021; Ellis, 2007; García, 2011; Tedick et al., 2011) and is broadly used to refer to a diverse range of educational approaches to SLA support. It is perhaps worthwhile to understand the nuances of these variations in order to get a

more thorough understanding on the situation in Hong Kong. In general, “immersion” refers to settings which promote students’ bilingual development through providing content instruction in L2 (Baker & Wright, 2021). However, the term can be further narrowed down by the number of instructional languages (monolingual or bilingual), the direction of immersion (one-way or two-way), the intensity of the programme (partial or total), age at which the immersion (early or late) started and social status of the learners (immersion or submersion) (Baker & Wright, 2021; Ellis, 2007; Garvis et al., 2018).

In Hong Kong, the term “immersion” sometimes can, however, carry a deviating meaning. For example, Kwan (2012) referred to an immersion approach as using the L2 as the instructional language for the learner to immerse in a language rich environment and for the L2 to become a tool for learning rather than a subject alone. In this case, immersion simply refers to the situation in which minority students are placed in mainstream classrooms to receive instructions in the majority’s language. Regardless of the absence of an undisputable definition, it is commonly agreed that immersion settings are beneficial in enhancing L2 proficiency. In the following, we will adopt Kwan’s definition when referring to immersion in the Hong Kong context.

Literature on bilingual development and educational settings showed that immersion programmes, especially two-way immersion (TWI) programmes, benefit learners in many ways. First of all, research on learning outcomes found that it was one of the most successful approaches in promoting second language development (Thomas & Collier, 2002, 2017). Learners in these programmes could achieve a high level of proficiency in L2 and their academic achievements may be equivalent or even exceed that of their L1 counterparts (Genesee, 1987; Swain & Lapkin, 1982). Besides language outcomes, it was also found that TWI programmes helped to stimulate students’ positive attitudes on learning with peers from different cultural backgrounds, develop learners’ cognitive abilities and lowered their chances of dropping out of schools (Lindholm-Leary & Borsato, 2001).

However, although TWI programmes were effective in helping minority students reach a functional level of proficiency for mastering academic contents, these students might not always be able to achieve native-like proficiency in speaking and writing (Thomas & Collier, 2002; Genesee, 1987). It has been found that they could rarely achieve vocabulary and syntactic knowledge equivalent to that of L1 speakers. That is to say, although these types of immersion programmes might seem to provide the ideal conditions for bilingual development, there might still exist some discrepancy between the learners’ linguistics and academic abilities, which affect the learning outcomes of the immersion programmes.

### ***6.2.3 Immersion: The Situation in Hong Kong***

In the Hong Kong context, educators tend to favour the immersion mode over the pull-out mode, especially at the preschool level. The fondness of this approach is based on the belief that young children can acquire a second language naturally

and easily through early immersion in a second language environment (Curriculum Development Council, 2017). In this regard, advocates, stakeholders and educators mostly assume the best way to enrich CSL students' Chinese proficiency is to let them learn together in the same classroom, where Chinese is the medium of instruction, with CS students (Tse & Hui, 2012). While it may be true that young learners are more sensitive to various linguistic features (Dörnyei & Skehan, 2003; Long, 1990), this view on SLA neglects the existence of an array of factors that contribute to the impact of immersion programmes, such as individual differences and teacher knowledge (Fortune, 2012).

Moreover, more attention should be paid to the difference in nature between the immersive settings in some reported studies and that in Hong Kong kindergartens. By far, most of the claims on the success of overseas immersion programmes were largely based on dual language programmes, which were highly structured for L2 promotion and were supportive students' L1 development (Thomas & Collier, 2002; Genesee, 2015). Moreover, many of the students participating in these reported studies came from low-middle to middle-class families and the parents were more likely to have higher engagement in their children's learning (Tedick et al., 2011; Valdés, 1997). Given the dissimilarities in the Hong Kong context in terms of the systematic provision of CSL instructions, sufficiency in CSL students' L1 support and family support, approaches that worked in other countries might not be practicable in Hong Kong. On this ground, more caution should be taken when exercising an immersion approach in the local context. This is because without providing L2 learners with systematic and adequate support, an immersive learning environment can be argued as somewhat being similar to what some literature referred to as a submersion setting, which is unfavourable to minority L2 learners as they are likely to be left "swim or sink" (Baker & Wright, 2021; Ellis, 2007; Garcia, 1993; Marsh et al., 2002). That is, these students must struggle to avoid "sinking" or being left behind.

#### ***6.2.4 Challenges and Difficulties Faced by Young Learners of CSL in Hong Kong***

The absence of efficacious Chinese support measures for the teaching and learning CSL in kindergarten mainstream classrooms makes L2 learning problematic in an immersive setting. First of all, there is a lack of extra support specifically designed for enhancing young CSL learners' literacy skills (Oxfam Hong Kong, 2019). Learning to read and write Chinese as a second language is considered to be extremely difficult, particularly to those whose L1 is an alphabetic language, due to a complicated orthographic system unique to Chinese characters (Loh, Mak & Tam, 2015, 2018). Each character is made up of strokes, which can combine to form over 500 components and thousands of possible characters. In addition, the formation of characters follows certain structural and componential rules, of which non-native Chinese speakers find it hard to grasp (Loh et al., 2018). Different from alphabetic languages like English,

Chinese's morphosyllabic properties and the large families of homophones add to the difficulty in the mapping of print and sound, making mastering the language challenging for CSL learners (Leong et al., 2019). Therefore, traditional approaches, such as reading aloud and copying, which are commonly used to teach the reading and writing of Chinese in mainstream kindergartens may not be sufficient to help CSL students learn Chinese characters (Tse et al., 2007). For this reason, CSL preschoolers might need additional and individualized language support outside of their regular classes in order to obtain language-specific skills to build up reading abilities.

Conventional classroom practices fail to address the diversified abilities and needs of CSL learners in the early years. Studies showed that there often exists a discrepancy between CS students and CSL students' language proficiency (Tse & Loh, 2008, 2009). Due to CSL students' lack of exposure to Chinese before schooling, a wide gap in language abilities already exists at the moment they entered kindergarten, not to mention that there are variations among individual students with different linguistic and cultural backgrounds. Since some of the CSL students have a relatively low level of Chinese competence when they enter kindergarten, classroom instructions dedicated to L1 students used in the classroom may be too difficult for the CSL students to comprehend. Nevertheless, it has been reported that a lot of kindergarten teachers were not in readiness or did not have prior training in teaching emergent CSL students in the mainstream classroom (Oxfam, 2019). As a result, they were unable to adapt their teaching in a setting with both majority and minority students. Furthermore, CSL learners may not always have the chance to use Chinese in an immersion setting due to a teacher-centred discourse and their nervousness to speak (Tse & Hui, 2012; Walsh, 2002). Not only may these withhold their natural development in the second language, but it may also lower their overall motivation in learning. Taking these into account, a support mode which provides the conditions similar to that in the pull-out setting is more preferable for enhancing young EM students' CSL proficiency.

### 6.3 Dynamic Enrichment Learning Mode (DELM)

In previous sections, we have discussed some of the advantages and shortcomings of the two most popular types of support modes—pull-out and immersion—in supporting L2 students in mainstream classrooms in relation to the situation in Hong Kong. We have also looked into the commonly adopted approaches, highlighting gaps in current support for CSL students in preschool levels. From the above discussions, it seems that without sufficient help, these emergent learners of Chinese might be hindered from developing higher competence in the L2. Thus, changes need to be made in order to overcome the limitations of these support modes.

Flexibility in instruction modes and the curriculum itself are necessary components for L2 supports to be effective (de la Luz Reyes, 1992; Harklau, 1994). That is, for an L2 intervention programme to be successful, it must be carefully adapted to ensure language and contents are systematically integrated, with learning activities

clearly aimed at promoting language acquisition through interaction (Hickey & de Meija, 2014; Snow et al., 1989).

Rather than being linear, teaching and learning is a multifaceted process and its efficiency can be dependent on an array of factors. It has been suggested that educational processes and settings are dynamic, complex and multifold as a whole, with interdependent variables contributing to the facilitation and constraints in learning (Ennis, 1992; van Vondel et al., 2016).

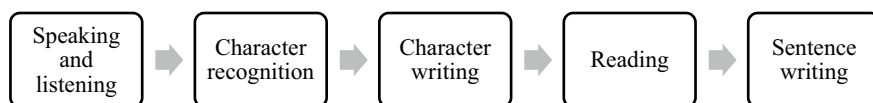
In the scope of this chapter, we would like to adopt such perspectives and define the current support mode—Dynamic Enrichment Learning Mode (DELM)—as a programme which fluidly integrates second language and mainstream curricula in a dynamic setting. This means, not only is DELM an instructional setting that incorporates the benefits of pull-out and immersion, but also a second language curriculum designed for facilitating emergent learners' CSL development in mainstream classrooms which adopt an integrated content approach. Supplementary to the local early year curriculum, DELM addresses CSL students' diversity and needs by promoting their L2 proficiency step-by-step in DELM activities, while enabling them to receive language instruction that aligns to contents in their regular classes. It is hoped that such a programme can facilitate these younger learners' CSL acquisition and aid their transition into mainstream curriculum learning progression.

## **6.4 Theoretical Framework of DELM**

### ***6.4.1 Input and Output***

Linguists, psychologists and educators have tried to explain the process and constructs on SLA from many perspectives, varying from nature of how the human brain acquires language, the role the linguistic environment plays in acquisition to the interaction among users and social influence. Early works by Krashen (1982, 1985) proposed the distinction between learning versus acquisition, where he stressed the importance of the subconscious process of acquiring a language over conscious learning, and that language should be acquired instead of learned. Moreover, the intelligibility of input is some of the most influential conditions for automatized L2 acquisition. To complete Krashen's views, Swain (1985) argued that language production—comprehensible output is equally important to the development of communicative competence.





**Fig. 6.1** The learning sequence of Chinese as a second language (Loh & Tse, 2012, p. 177)

### 6.4.2 *Interaction and Scaffolding*

Deriving from the notion of Zone of Proximal Development (ZPD) (Vygotsky, 1978, 1986), sociocultural theorists perceived language acquisition as the results of interactions among learners, their peers and capable others (Lantolf et al., 2015). From this perspective, language and cognitive developments can be scaffolded through having the learner engaged in challenging situations with the help from an experienced other (Tomlinson et al., 2003). While various views might focus on different aspects of language development, key determinants for L2 acquisition appear to be plentiful language input, chances for the learners to experience and interact with others using the target language, along with sufficient scaffolding from teachers.

### 6.4.3 *Progression of Learning Materials*

Literature on second language emergence revealed that SLA follows a sequence and certain structures are developed before others (Dulay & Burt, 1974; Smith & Truscott, 2005). Loh and Tse (2012) also suggested that there is a sequence for learning CSL (see Fig. 6.1). They believed that learners must first acquire a certain competence level in listening and speaking, which are the prerequisites for understanding instructions, interacting with peers and participating in-class activities. It is only when learners have a certain extent of competence in the spoken language and have obtained a bank of basic vocabulary items before they can proceed into more sophisticated tasks like character recognition, reading and writing using lexical items they have acquired.

### 6.4.4 *Integrative Perceptual Approach Learning Chinese Characters and Vocabulary Items*

The recognition and writing of Chinese characters are areas which CSL students find the most challenging. The DELM takes on the *Integrative Perceptual Approach* (IPA) (Tse, 2002), to promote L2 Chinese learners' literacy level on cultivating their orthographic knowledge and expanding their vocabulary size in an engaging way. This approach integrates the use of multimodal texts, songs and games, character learning strategies and pedagogies for semantic network building to allow young CSL students to acquire a lot of characters and words in a short time.

Incorporating the phenomenographic theory of learning (Marton & Booth, 1997), the IPA for teaching Chinese characters accentuates learning through reiteratively discerning features between whole (Chinese character) and (components, structures and sound of Chinese characters) parts to establish relations (Tse et al., 2007). In other words, the learners are encouraged to pay attention to the componential, structural and sound features while systematically comparing and contrasting them with clusters of characters which share similar features (Loh et al., 2015; Tse et al., 2007). Through experiencing and practising, the learners can efficiently and effortlessly acquire structural awareness crucial to the automatic decoding of characters.

Besides promoting students' orthographic awareness, another feature of the IPA is that it facilitates students' vocabulary development by helping students build up semantic networks (Loh et al., 2015; Tse et al., 2007). Through classroom activities, teachers elicit ideas, concepts and vocabulary items pre-existing in the children's mental lexicon and record these items coming from the students on the board. Since students are already familiar with these concepts or ideas, they can easily map the meanings onto the written forms, making the learning of characters faster and easier.

## 6.5 The Dynamics of DELM

As aforementioned, an educational setting is dynamical, and a successful support model should be one which is flexible and multifarious so that the divergent needs of L2 students can be catered for (Harklau, 1994). Thus, the design of the current support mode has given thoughts to the dynamics on the levels of educational programming, curricula integration, teacher collaboration and learner differences. The dynamics of the DELM is threefold.

### 6.5.1 *The Dynamics of Educational Programme Settings*

The DELM enables EM students to benefit from three types of educational settings: immersion setting, DELM groups, and, individual or pair sessions in DELM. In an immersive setting, CSL students receive content instruction in the mainstream classroom in together with their CS peers. This allows them to keep up with the school-based curriculum, while also increases their chances to interact with native speakers of their age using Chinese. The CSL students are extracted from their regular classes during group work or free play time to receive Chinese enrichment in groups two to three times a week. In these group enrichment activities, L2 learners receive language-based instruction, which aligns with themes they learn in their mainstream classes, through interactive activities and play. In the DELM activities, the L2 students can get extra support from teachers and practice using Chinese in a non-threatening environment wherein not possible in an immersive setting because of their unassertiveness. During one-to-one or pair sessions once every two weeks,

CSL students are provided with extra support further tailored to their needs. Through alternating among the three settings, the DELM activities offer students with extra language experiences supplementary to that of the mainstream programme. This enables them to immerse in a safe, comfortable environment with rich target language without having to miss out any contents of the mainstream curriculum.

### ***6.5.2 The Dynamics of Integrated Curriculum***

Another feature of the new learning model is mapping the DELM curriculum with the mainstream curriculum in an integrated curriculum. This dynamic process demands changes and adjustments to be taken place in the school curricula through the collaboration between mainstream teachers and specialist teachers. As Snow et al. (1989) pointed out, systematic integration and sufficient communication between specialist and class teachers are the fundamentals of successful support programmes. Therefore, before the commencement of DELM curriculum, the specialist teacher will first communicate with the class teacher to ensure the contents in the DELM curriculum align with the school-based curricula and EDB curricula in terms of an integrated curriculum framework. Moreover, the two teachers will meet regularly to reflect on the students' progress to fine-tune learning activities and targets accordingly. For example, if the class teacher notices that an L2 student needs extra help in certain areas, he or she may notify the specialist teacher so that the specialist teacher can provide the learner with extra language assistance correspondingly. On the other hand, if a student is making good progress in some aspects, the specialist teacher may also inform the class teacher so that he or she may provide more opportunities for the student to practise using the language in regular class activities.

### ***6.5.3 The Dynamics of Learning Progressions Catering for Learning Diversity***

It is commonly misconceived that the method and pace of learning are the same among L2 learners (Harper & de Jong, 2004). However, in Hong Kong, CSL students often come from heterogeneous backgrounds and their abilities are often diverse. Thus, there is no “one-size-fits-all” approach for teaching these students. Although the curriculum in DELM mode contains a set of pre-designed learning activities developed based on the sequence for learning CSL (Loh & Tse, 2012), the learning tasks within each theme allow for flexibility, with clear guidelines to differentiate learning objectives and tasks for basic and advance level students. Figure 6.2 summarizes the types of learning activities and targets covered in the DELM activities within a typical learning theme. These activities are arranged from the easiest at the bottom tier to the most demanding at the top. While the learning activities usually follow this

sequence within a thematic unit, specialist teachers can adjust the difficulty of the tasks according to the students' pace and ability by moving up and down the tiers. More specifically, while CSL teachers may make adaptations on a class level and differentiate the goal of each activity for individual learners, they may also decide to work on particular areas with individuals according to their needs during individual or pair classes to provide sufficient scaffolding. For example, they can pre-teach or re-teach for weaker students or challenge stronger students with more demanding tasks.

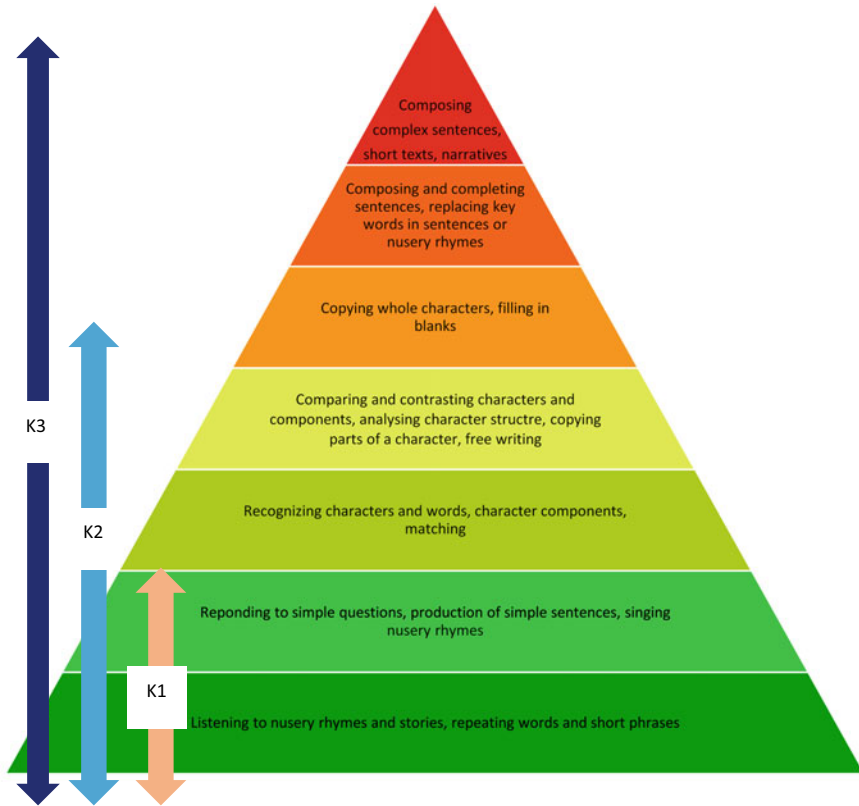


Fig. 6.2 The typical sequence of learning tasks in a thematic unit

## 6.6 Design of Teaching and Learning Materials and Tasks Typically Used in DELM Classes

To facilitate CSL students' progressive development in Chinese, the design of DELM encompasses an array of pedagogical approaches and strategies appropriate for emergent CSL learners, taking into account various developmental and second language acquisition theories and empirical researches on learning Chinese and CSL learning. The series of multimodal materials and activities in the DELM are designed to provide sufficient chances for both language input and output. Also, enrichment is given in group and individual settings with a lower teacher-student ratio. This allows for increased opportunities for meaning negotiation, collaboration and scaffolding. In terms of selection of learning materials, keywords in the curriculum of DELM are carefully selected based on a corpus on spoken Cantonese by young children (Tse et al., 2006), word frequency and common themes in local kindergarten curricula, children's interests, experiences and developmental stages as well as teachability.

Below is a list of teaching and materials typically used in DELM activities.

**Modified and original picture storybooks.** The use of stories helps present vocabulary items to children in meaningful contexts. Some storybooks are modified based on the learning design of the DELM activities. For original picture storybooks, characters and words that meet the developmental needs of children are selected as target vocabulary items for the stories in context, both of which are highly relevant to the children's real-life experiences. At the same time, the process of storytelling provides a good basis for language modelling, discussion and negotiation of meaning.

**Cantonese nursery rhymes.** One unique feature of the DELM is the use of Cantonese nursery rhymes specifically written for the teaching and learning of Chinese characters and Cantonese pronunciation. The lyrics of these nursery rhymes consisting of target vocabulary items and/or sentence structures are highly relevant to the thematic units of the course. The melodies are simple, easy to remember and are written to match the tone of the Chinese characters. Besides, all these original nursery rhymes conform to the principle of tone-melody matching to facilitate tonal awareness in Chinese language learning. With the repetition of the keywords, students can learn and remember the words naturally as they sing along. Moreover, the use of songs in language teaching helps to lower the affective filter of L2 learning (Lin, 2008).

**Interactive and communicative games (e.g. matching games, memory games).** While games are known to increase students' motivation in learning, they are said to provide students the opportunities to communicate in authentic situations (Littlewood, 2011) and lower students' anxiety level, which may act as a mental block that obstructs learning. This allows them to progress from focusing on the language utilizing it for communicative purposes in real settings. In the DELM mode, interactive and communicative games (e.g. matching games and memory games) are purposefully sequenced after the learning tasks. The rationale is to reduce learning pressure and anxiety while enhancing the Chinese language learning outcomes.

**Free writing.** In a traditional classroom, teachers often stress accuracy, stroke order and neatness when children write. This holds the CSL students back from practising writing when they are unsure of the correct form of the character. With respect to the emergent literacy paradigm, young learners develop emergent literacy skills through literacy-rich environment and meaningful social situations (Saracho, 2017). Free writing activities allow students to write or draw pictures, lines and character-like symbols freely on a particular topic on a blank piece of paper (Tse et al., 2014). Students are encouraged to explore and produce written language expressions by drawing, scribbling and pretending writing. Among the frequently used writing pedagogies, modelling is a major scaffolding strategy. For example, the teacher tries to provide students with the correct written form of the word and further ask them to compare that to their writing. This kind of practice allows children to practise writing without stress. Besides, teachers can also elicit meaning from the children's mental lexicon and help to reinforce the sound and meaning with the written form.

All in all, the DELM curriculum and pedagogies are designed to facilitate CSL students' Chinese learning through providing them additional support that incorporates a broad range of pedagogical techniques in various settings. As mentioned earlier in this chapter, although there has been abundant research on the education settings for promoting L2 learning, the effects of different settings on young CSL learners in Hong Kong have not been examined. Thus, this study sorts to evaluate the effectiveness of DELM and whether it is more advantageous than the conventional immersion method in supporting CSL students in local kindergartens. The present study collected and compared data on the improvement of a group of students who received DELM activities against a group of students who learn Chinese naturally through being immersed in a Chinese environment. We hypothesized that the DELM which takes into account the diversity and needs of young CSL learners is more effective in enhancing their CSL proficiency than an immersion setting.

## 6.7 Methodology

### 6.7.1 Participants

The current mixed-method study is part of a broader longitudinal research on supporting EM preschoolers learn CSL in mainstream kindergartens adopting an integrated content curriculum in Hong Kong. The study involved 9 non-profitmaking local kindergartens located across different regions in Hong Kong. Cantonese was the main medium of instruction in all of the schools, except for one which admitted mostly EM students, where both Chinese and English were used for instruction. Students studying in these schools generally came from families with low socio-economic status and the teachers in the schools had little or no previous training on teaching CSL to EM students.

A total of 256 EM students aged 4–5 years, all of which studying in K2 or K3 in these 9 schools, were recruited to participate in the study due to their accessibility. Most of these students came from families with South Asian backgrounds (such as Nepalese and Pakistani) and were all non-native speakers of Chinese. These students were assigned into two groups, DELM and immersion, based on the schools they studied in. The students in 6 schools that received intervention were in the DELM group, whereas the students in 3 schools that voluntarily participated in the study were in the immersion group. There were 146 CSL kindergartners (K2 = 70, K3 = 76) in the DELM group and 110 CSL kindergartners (K2 = 58, K3 = 52) in the immersion group. A total of 12 teachers across the 6 DELM kindergartens were invited to participate in semi-structured interviews after the completion of the programme at the end of the school year.

### 6.7.2 *Intervention*

The CSL students in the DELM received two to three group DELM enrichment sessions (each session 30 min) taught by the Project's specialist teachers every week. They also received one pair or individual session every fortnight. EM students were grouped by grades and sessions were held during their regular class hours.

### 6.7.3 *Measures Used in the Study*

Pre-test and post-test were carried out to assess their Chinese proficiency levels of the two groups of students before and after the school year. The assessment instrument consisted of 3 measures (character reading, mental lexicon and free writing) covering a wide range of linguistic skills, including character recognition and pronunciation, vocabulary size and speaking skills, and, writing abilities. All the tasks were administered to the children on a one-to-one basis by trained researchers except for the free writing task, in which the children were first invited to draw or write in a group setting before explaining their thoughts to the researcher.

***Character reading test.*** This task consisted of 70 items, each containing a Chinese character. Students were required to name the Chinese characters presented to them in chronological order. The sequence of the characters was sorted in ascending difficulty. This test assessed the students' ability in Chinese character recognition and pronunciation. One mark was given to each correct item.

***Mental lexicon test.*** The mental lexicon test was to assess the vocabulary size of the students by testing their abilities in recognizing and verbally describing familiar situations. The students were presented with three pictures related to the settings of family, school and playground respectively. The students were asked to observe and talk about each picture by naming the objects, describing the actions or talking about anything related to the picture. The maximum duration of each task was 5 min. There

was no maximum score for this test and one mark was given to each vocabulary unit uttered by the child.

**Free writing test.** The free writing test aimed at examining the students' ability in writing Chinese and expressing meanings in written forms. It also provided insights into meanings represented in the children's mental lexicon. To begin with, students were instructed to draw and write anything they liked on the paper. During the test, they could ask the examiner to show them the written forms of words and they could copy these on their piece of paper. In the latter part of the test, the examiner would guide the students to read aloud or explain what they had put on paper (lines, shapes, symbols, pictures or words) and record the relevant data. The children would be given a score based on criteria-reference with the maximum score of 15. The criteria-reference rubrics are developed based on a writing study (Chan, 2013), and further adapted from a Chinese character writing performance assessment form (Tse et al., 2015).

#### **6.7.4 Teacher Interviews**

By the end of the semester, the class teachers of the CSL students participated in semi-structured interviews asking about their observations on these students' changes in CSL proficiency, motivation, class participation and so on. They were also invited to provide any comments they had on the project.

#### **6.7.5 Data Analyses**

The answers were marked by experienced markers and inputted for further analysis. To compare the effectiveness of the DELM programme and immersion programme in enhancing CSL students' proficiency, the mean scores of each group's performance in each task in the pre-test and post-test were computed. The percentage change of pre-test and post-test between the groups were calculated and compared. Tukey HSD post hoc tests were also conducted on the difference of scores of each test. Given that the difference in Chinese language proficiency levels of the students in the DELM group and the immersion group were relatively large, Cohen's *d* effect size was used to compare each programme's effectiveness in enhancing the CSL students' language proficiency, taking into consideration the dispersion of individual differences within the group.



## 6.8 Results

The mean scores of each measure have been calculated and analysed based on the students' groups and grades. As seen in Table 6.1, CSL students in the DELM group made significant improvements in the post-test and they outperformed the immersion group in most measures. The percentage changes in each of the tasks ranged from +233.20% to +1951.4% and +72.50 to +290.9% for K2 and K3 CSL students respectively. Improvements were also observed when comparing the pre-test and post-test scores of the immersion group, with percentage change of K2 students' performance ranging from +107.30 to +815.2% in the five tasks, and K3 students' ranging from +114.40% to 519.8%.

The post-test mean differences between groups were explored by separate Tukey HSD post hoc tests. Results revealed that both K2 and K3 students in the DELM group had better performance in the character reading and mental lexicon tests than those students of the same grade in the immersion group. However, they did not differ in the free writing test (see Table 6.2).

The effect sizes of all tests were computed. Table 6.3 compares the effectiveness of the DELM and the immersion approach. The effect sizes of the DELM groups students' performance in various tests varied between 0.6 and 3.05 and that of immersion group ranged from 0.81 to 1.97. The values of Cohen's *d* for all measures in both groups were greater than 0.8 (except K3 students' performance in the mental lexicon task), representing that the impacts of both DELM and immersion settings were large (Cohen, 1992).

### 6.8.1 Interview Results Analysis

All of the teachers who participated in the interviews indicated that the enrichment activities have aroused CSL students' interest in Chinese learning. This is reflected in the increased learning motivation and engagement during class activities and were more willing to share their ideas using Cantonese. They were also able to communicate with their teachers and peers with the second language. Some of the teachers noted that the nursery rhymes used in the DELM activities were particularly helpful in helping CSL students memorising new vocabulary items.

## 6.9 Discussion

It was hypothesized that CSL students in the DELM group who received L2 instruction systematically and progressively would make more improvements, and our results generally supported our predictions.

**Table 6.1** Pre-test and post-test mean scores and percentage changes in all measures between DELM and immersion by grades

Measures	DELM group						Immersion group					
	K2 (n = 70)			K3 (n = 76)			K2 (n = 58)			K3 (n = 52)		
	Pre-test	Post-test	Percentage change	Pre-test	Post-test	Percentage change	Pre-test	Post-test	Percentage change	Pre-test	Post-test	Percentage change
Character naming	0.7	14.36	1951.40	6.45	25.21	290.90	0.79	7.23	815.20	2.42	15	519.80
Mental lexicon	5.23	28.91	452.80	23.56	41.13	74.60	2.28	12.02	427.20	11.08	24.69	122.80
Free writing	2.29	7.63	233.20	5.2	8.97	72.50	3.85	7.98	107.30	4.04	8.66	114.40

**Table 6.2** Results of Tukey HSD post hoc tests in comparing the performance between two groups

Measures	K2	K3
	<i>D – I</i>	<i>D – I</i>
Character naming	7.13**	10.21**
Mental lexicon	16.89***	16.43**
Free writing	-0.35	0.31

Notes D = DELM group; I = Immersion group

\* $p < 0.05$ , \*\* $p < 0.01$ , \*\*\* $p < 0.001$

**Table 6.3** Effect sizes based on mean differences of pre-test and post-test between DELM and Immersion Group

Measures	DELM group		Immersion group	
	K2 ( <i>n</i> = 70)	K3 ( <i>n</i> = 76)	K2 ( <i>n</i> = 58)	K3 ( <i>n</i> = 52)
Character naming	1.84	1.43	0.98	1.27
Mental lexicon	1.72	0.60	0.85	0.81
Free writing	3.05	1.16	1.82	1.97

Table 1 compares the percentage change in pre-test and post-test scores in the two groups of students. We can see most improvement is observed in the K2 students receiving instruction in DELM, with remarkable progress in the character naming and mental lexicon tasks. Although a part of this can be explained by the low starting point of the students, it cannot be neglected that the DELM has a positive effect on the CSL students' abilities in various areas when comparing the effect size on the tasks between the DELM and immersion group. Table 6.3 shows the size of effect the DELM and immersion mode had on CSL student's Chinese proficiency. Large effects ( $>0.8$ ) were observed in most tasks in both groups, the effect sizes of the K2 DELM group in all three tasks were greater than that of the immersion group. While the effect sizes of the mental lexicon and free writing tasks of the immersion group were larger than that in the DELM group at K3 level, one should not overlook that the K3 students in the immersion group had a much lower score in the pre-test in some of the tasks (the character naming and the mental lexicon tasks) when compared to the DELM group. This may affect the overall percentage change and effect size in the analysis. Overall, the findings in our study still reflected that the DELM had a more positive impact on CSL students' Chinese proficiency, particularly in terms of character naming, expanding students' mental lexicon and promoting students' speaking skills.

To understand how the DELM contributes to enhancing CSL students' skills in these aspects, we can perhaps look into the underlying framework of the DELM and the pedagogical skills used in the enrichment activities.

### ***6.9.1 Improvements in Character Recognition and Naming***

Character recognition is one of the biggest challenges CSL learners encounter. Chinese is an ideographic language, of which the writing system consists of a vast number of characters making up of strokes and components, and mastering its orthographic knowledge is said to be the crucial way to character recognition (Leong et al., 2011; Loh et al., 2018). In view of this, DELM curriculum places a great emphasis on character learning adopting the IPA approach, which has been found to be effective in helping CSL learners acquire the written form of the language (Loh et al., 2015; Loh & Tse, 2012). Conventionally, preschool students are taught to learn character by whole-word method rather than guided to focus on the orthographic features. Moreover, students are often encouraged to learn these characters by copying and rote learning (Loh et al., 2015). This process can be tedious for CS students and can be even worse for CSL students due to the complexity of the internal structure made up of strokes in Chinese characters (Tse et al., 2007).

In addition, the DELM activities adopted small group and individual settings in using the IPA for character learning which helped CSL students focus on the orthographic features of Chinese characters through interactive games and activities. During these activities, CSL students were encouraged to relate and differentiate the componential and structural features of Chinese characters (Loh et al., 2015; Tse, 2002; Tse et al, 2007). With sufficient interactional time, these strategies helped students raise their awareness towards the structural cues in characters. In the post-test, students in the DELM group seemed to be able to use this increased sensitivity to process the orthographic information in characters and were thus able to perform better in the character naming task.

Employing the small group and individual settings in the use of nursery rhymes also explains students' success in enhancing character reading skills. In each thematic unit in the DELM programme, CSL students were introduced a nursery rhyme containing key lexical items and characters. Studies have shown that songs can increase learner motivation as well as promoting language learning by aiding the mapping of musical and linguistic properties (Schön et al., 2008). This facilitation is crucial to Chinese character recognition and pronunciation because of the language's tonal and morphosyllabic properties. While this concept might be hard to grasp for CSL students by merely listening to teachers' instruction, providing sufficient time and individual guidance on singing nursery rhymes might have played a major role in helping the CSL children memorize the pronunciation of characters and words.

### ***6.9.2 Improvements in Vocabulary Size***

Another problem faced by CSL students is their small size of vocabulary in Chinese. The DELM was found to be effective in enriching CSL students' vocabulary than the immersion mode in a couple of ways. First, students benefited from receiving extra

exposure to the words related to the themes which they learned in the mainstream classroom in their small groups. Since the majority of students in mainstream classrooms were native speakers of Chinese who might already have some background knowledge or have even acquired the spoken forms of new words, the teachers in an immersive classroom might spend less time on the explicit explanation of vocabulary items, making it difficult for CSL students to understand the words being taught. On the other hand, the DELM activities were carefully designed and fine-tuned to align with the school-based curriculum in each school so that CSL students could have increased opportunities seeing thematic vocabulary items occurring in different contexts. Moreover, the target language was often presented in stories with plenty of visual cues, which provided a natural context to help the students make sense of meaning. CSL students might also find the context in these picture books more relevant to their experiences. It has been noted that elevated exposure to L2 words in multimodal means can promote L2 vocabulary acquisition (Bisson et al., 2013) and that providing comprehensible input plays an important role in language acquisition (Krashen, 1985; Swain, 1985). Then, DELM seemed to provide the right conditions for CSL to better acquire newly taught vocabulary when compared to CSL students in an immersion setting.

Secondly, the use of IPA, which has been proven to be effective in helping CSL learners learn vocabulary effectively and in a shorter time (Loh et al., 2015), might also have contributed to the better learning results in DELM students. Under the IPA approach, teachers often used different techniques to elicit new vocabulary items related to the topic or characters with similar components during class activities. As these words or ideas coming from the students were concepts or meanings which already existed (partially or fully) in their mental lexicon prior to the lesson, they were likely to relate to the students' schema and language capacities. Also, because words were learned in clusters, the association among novel words would be strengthened, allowing for long term retention of vocabulary. Moreover, since there was no limitation on the number of words taught per lesson, supposedly, learners could learn an unrestricted number of level-appropriate words according to their capacity as oppose to being in a traditional class setting (Loh et al., 2015).

### ***6.9.3 Improvements in Speaking Skills***

The improvement observed in the mental lexicon task not only indicated an expansion of vocabulary, but also improvements in students' skills in speech production. One possible explanation of this result was that the group and individual settings in DELM activities allowed for more teacher–student interaction. From what has been discussed earlier, social interaction is also an underpinning of SLA that it provides chances for scaffolding (Lantolf et al., 2015; Tomlinson et al., 2003; Vygotsky, 1986) and that it increases L2 usage is as important as language input (Swain, 1985). During DELM and individual lessons, specialist teachers and CSL students could frequently negotiate for meaning and adjust their language to get the message

across. For example, communicative learning activities in DELM groups allowed CSL students to practise speaking in a less stressful environment; and, the picture storybooks provided a rich context for children to interpret meaning, make spontaneous responses and model teachers' speech. This means more scaffolding can be provided to students during DELM activities, which may help gradually build up students' capacity to express ideas with their own language (Fleta, 2019). In contrast, there was little capacity for quality interaction between the teacher and L2 learner in an immersion setting that a large portion of classroom interaction is dominated by teacher talk and L2 students were often shy to speak (Tse & Hui, 2012; Walsh, 2002),

## 6.10 Conclusion

The limitations of the current study lie in three aspects. First, the CSL students' proficiency in L1 have not been measured. While L1 development has been said to be influential to that of L2 (Genesee, 1994), further investigation may help understand how L1 literacy plays a role in the acquisition of CSL in our group of participants. Second, due to operational reason, students in the DELM group and the immersion group studied in different schools, so the variations in school-based curriculum have not been taken into account. Third, the study has not taken into account the student' achievement in other content areas. Thus, it is worthwhile to investigate how the current support mode affects these students' L2 development in other content areas.

To conclude, the present study showed that the DELM was more effective in promoting EM young learners' CSL proficiency and motivation. Contrary to the common belief that young L2 learners can acquire a new language naturally by receiving instruction in the L2 context, and that pulling students out of the classroom might have a negative impact on the children's overall development, our results revealed that with a well-structured framework and suitable pedagogical techniques, young learners could benefit more from enrichment settings like that of the DELM.

The current study suggested that educators should be more cautious when adopting an immersion approach, especially for younger L2 learners who lack a good foundation in the target language. A good support mode should allow students to learn in various educational settings may be more appropriate for providing L2 learners a positive learning environment and helping them gradually build up a sound foundation in the target language. Moreover, it should be flexible, taking into consideration the diversified abilities and needs of students.

It is hoped that the findings of the current study can shed some light on the development of CSL and other L2 support programmes in the local as well as international contexts.

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