An Analysis of English Vocabulary in Hong Kong Textbooks for Bilingual Children

Chris Law, The Chinese University of Hong Kong, Hong Kong SAR
Stephen Matthews, The University of Hong Kong, Hong Kong SAR
Virginia Yip, The Chinese University of Hong Kong, Hong Kong SAR

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Abstract
Vocabulary acquisition is central to building literacy, yet there is little research on the vocabulary component of textbooks for school children. Acquiring the vocabulary of a language is commonly interpreted as simply "knowing the meaning of the words and being able to use the words", acknowledging the receptive and productive aspects of vocabulary. However, Nation proposes that knowing a word involves nine aspects (categorized into "form", "meaning", and "use") from the perspective of second language learning. This study shows that among the most popular primary English textbooks in Hong Kong (3 major publishers; 9 textbooks in total), "form and meaning" receives the most attention, while "grammatical functions", "spoken form" and "written form" receive comparable attention. The other five aspects of vocabulary knowledge, including "word parts", "concept and referents", "associations", "collocations", and "constraints on use" receive little or no attention. This study explores the phenomenon by drawing upon vocabulary literature and the primary curriculum in Hong Kong. It suggests that researchers and industry collaborators need to consider a more holistic view of vocabulary knowledge, thus enhancing children's L2 lexical diversity via their exposure to English textbooks with L1 input.

Keywords: Aspects of Vocabulary Knowledge, English Textbooks for Bilingual Children, Lexical Diversity

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Introduction

What does it mean to learn a word? It is commonly thought that learning a word is equivalent to learning its meaning. According to Singleton (1999), vocabulary teaching is "addressing only the tip of the lexical iceberg". Literature has long discussed incidental and intentional vocabulary learning through exposure to input, yet there is little research on the vocabulary component of textbooks (Nordlund, 2015). We have especially limited understanding of how bilingual children (L1: Cantonese; L2: English) in Hong Kong acquire vocabulary from English textbooks.

In 2022/23, there were 593 primary schools and 333,551 students[1] in Hong Kong. Most primary students use English textbooks at school every day. As primary and compulsory learning material for such a significant number of bilingual primary school children (aged 6-11), this study examines the aspects of vocabulary knowledge (Nation, 2001) conveyed to students via the activities in nine English textbooks from three major publishers across three levels (Primary 1, 3, 5) which are widely used in Hong Kong primary schools.

Research Background

The majority of students in Hong Kong use textbooks at school as the primary learning materials. Textbooks undoubtedly play a dominant role in classroom practice and most teaching programs (McDonough & Shaw, 1993). Littlejohn (1998) even considered textbooks as "the most powerful device" to transmit knowledge from teachers to students.

As a source of language input, the vocabulary in textbooks builds a student's lexical diversity (LD), which is regarded an objective indicator of language development (Malvern, et. al., 2004) and language ability (Treffers-Daller, et. al., 2018). According to Jarvis and Hashimoto (2021), the essence of LD is the variety of words that appear in spoken and written discourse.

Other than variety (breadth), this article studies primarily various aspects of vocabulary knowledge (depth). Although acquiring the vocabulary is commonly interpreted as simply "knowing the meaning of the words and being able to use the words", Nation (2001) suggested that knowing a word involves three main aspects including form, meaning, and use, and each of these aspects contains three corresponding sub-aspects as shown in Figure 1 below:
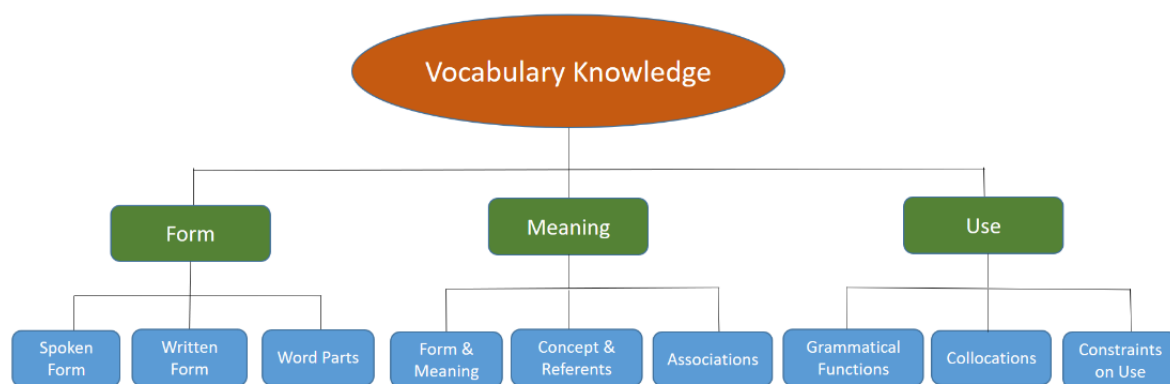

Figure 1: Aspects of vocabulary knowledge (Nation, 2001)

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[1] https://www.edb.gov.hk/en/about-edb/publications-stat/figures/index.html

Each of the vocabulary aspects encompasses a productive and expressive part as shown in Table 1 below:

Form	Spoken form	R	What does the word sound like?
		P	How is the word pronounced?
	Written form	R	What does the word look like?
		P	How is the word written and spelled?
	Word parts	R	What parts are recognizable in this word?
		P	What word parts are needed to express the meaning?
Meaning	Form and meaning	R	What meaning does this word form signal?
		P	What word form can be used to express this meaning?
	Concept and referents	R	What is included in this concept?
		P	What items can the concept refer to?
	Associations	R	What other words does this make us think of?
		P	What other words could we use instead of this one?
Use	Grammatical functions	R	In what patterns does the word occur?
		P	In what patterns must we use this word?
	Collocations	R	What words or types of words occur with this one?
		P	What words or types of words must we use with this one?
	Constraints on use (register, frequency…)	R	Where, when, and how often would we expect to meet this word?
		P	Where, when, and how often can we use this word?

Note: R = receptive vocabulary; P = productive vocabulary

Table 1: Productive and expressive parts of vocabulary knowledge (Nation, 2001)

Brown (2010) carried out a study on vocabulary activities in English textbooks for secondary students in Japan. The study shows that a single aspect of vocabulary knowledge – form and meaning – receives the most attention in the textbooks, while two other aspects – grammatical functions and spoken form – also receive attention. The other six aspects – written form, word parts, concept and referents, associations, collocations, constraints on use – receive little or no attention.

Following Brown's study, one question calling for investigation is whether Hong Kong children's vocabulary depth is enhanced through acquiring other aspects of vocabulary knowledge from the textbook activities. This is not to say that students have to acquire every aspect of vocabulary items, and all aspects should receive equal attention. In many circumstances, knowing the meaning of the words would suffice for communicative purposes. This article argues that vocabulary activities in textbooks should cover all aspects to give a balanced exposure to students who may acquire various aspects in both receptive and expressive parts through incidental or intentional learning (Yeung et. al., 2020).

In a bilingual context such as Hong Kong, we need to consider the role of children's existing vocabulary knowledge in their first language, in this case Chinese. Hui et. al. (2016) compared Chinese-English bilingual students' L2 vocabulary acquisition with entirely no L1 support, principled L1 support (gloss provided), and full L1 support (bilingual texts provided). Students with a principled amount of L1 support (specifically, glosses provided in Chinese) performed best in L2 vocabulary learning, while those in the L2-only and bilingual texts conditions performed similarly. Some educational implications of these findings will be pursued in the discussion section.

Research Questions

This study attempts to answer three research questions:
1. What aspects of vocabulary knowledge are presented in Hong Kong primary English textbooks?
2. Why are only some aspects primarily covered whereas other aspects are not emphasized?
3. How can Chinese-English bilingual children acquire more aspects of vocabulary knowledge?

Methodology

We have examined nine primary English textbooks published by three major publishers in Hong Kong, across 3 levels for primary 1, 3 and 5.

Title	Author	Publisher	Year of publication
Head Start 1A	Taylor, C. A.	Educational Publishing House: Hong Kong.	2017
Head Start 3A	Beare, J. N. C.		
Head Start 5A	Manin, G. J.		
Primary Longman Elect 1A	Lanaway, J. & Monk, C.	Pearson: Hong Kong.	2023
Primary Longman Elect 3A			
Primary Longman Elect 5A			
Oxford Ready 1A	Pozzoni, A. & Leung, L. K.	Oxford University Press: Hong Kong.	2017
Oxford Ready 3A			
Oxford Ready 5A			

Table 2: Nine primary English textbooks examined in this study

This study defines a vocabulary activity as any activity that focuses on the form, meaning or use of the selected vocabulary specified in each chapter of the textbook. The vocabulary activities include question types such as multiple-choice questions, filling in blanks, matching questions and answers, etc. All vocabulary activities from these textbooks were counted and identified with the corresponding aspects of vocabulary knowledge to calculate the mean percentage.

In identifying the aspects of vocabulary knowledge involved in an activity, this study focuses on the aims of each activity. For example, many activities assess students' grammar knowledge, but only those that aim to pay attention to grammatical functions are counted as such.

This study is part of a larger project aiming to create the first Hong Kong Primary English Textbook Corpus for further linguistic analysis and research. We extracted all the vocabulary items from the nine textbooks across three levels by three publishers.

Table 3 shows the detailed figures from the nine textbooks in this study. It is evident that children are exposed to increasingly more target vocabulary as they progress from primary 1 to 3 and 5. The number of words in the textbooks also increases, showing greater lexical diversity as the level goes up.

	Primary Longman Elect			Head Start			Oxford Ready			
	1A	3A	5A	1A	3A	5A	1A	3A	5A	Total
Number of vocabulary activities	69	76	74	69	67	64	77	76	80	652
Number of target vocabulary items	60	65	83	62	78	62	51	52	60	573
Number of words	3762	6273	9873	4836	7532	10266	3853	6370	10214	62943

Table 3: Increasing trend of vocabulary activities, target vocabulary, and lexical diversity in primary 1, 3, and 5 English textbooks

Table 4 shows the percentage of various parts of speech in each book of a textbook series. In primary 1, children are mostly exposed to nouns and verbs, and when they get to primary 3, they learn adjectives. When they reach primary 5, the parts of speech in target vocabulary are more wide-ranging. In addition to nouns, verbs and adjectives, children get exposed to adverbs and prepositions.

	Noun	Verb	Adjective	Adverb	Preposition
Primary Longman Elect 1A	73%	10%	0%	0%	0%
Primary Longman Elect 3A	72%	28%	15%	0%	0%
Primary Longman Elect 5A	41%	33%	17%	7%	2%

Table 4: Enlarged parts of speech in primary 1, 3, and 5 English textbooks

Discussion

Research question 1 asks what aspects of vocabulary knowledge are presented in Hong Kong primary English textbooks. Table 5 gives a detailed picture of the mean percentage of all vocabulary aspects in Hong Kong primary English textbooks:

	Form and Meaning	Grammatical Functions	Spoken Form	Written Form	Collocations	Concept and Referents	Associations	Word Parts	Constraints on Use
Primary Longman Elect 1A	80%	57%	45%	38%	0%	3%	0%	0%	0%
Primary Longman Elect 3A	75%	50%	46%	29%	8%	3%	1%	0%	0%
Primary Longman Elect 5A	70%	42%	41%	32%	9%	0%	0%	4%	0%
Head Start 1A	70%	49%	41%	35%	4%	3%	1%	0%	0%
Head Start 3A	76%	52%	34%	46%	3%	1%	3%	0%	0%
Head Start 5A	67%	53%	28%	50%	5%	2%	3%	0%	0%
Oxford Ready 1A	65%	44%	42%	32%	0%	8%	0%	0%	0%
Oxford Ready 1A	76%	51%	45%	43%	3%	4%	0%	0%	0%
Oxford Ready 1A	78%	49%	35%	49%	4%	0%	1%	1%	0%
Mean (of percentage)	**73%**	**49.70%**	**39.50%**	**39.40%**	**4%**	**2.60%**	**1.10%**	**0.60%**	**0%**

Table 5: Mean percentage of all vocabulary aspects in Hong Kong primary English textbooks

Figure 2 gives a clear picture of the distribution of the vocabulary aspects covered in activities in Hong Kong primary English textbooks. Similar to Brown's study, "form and meaning" receives the most attention (73%), then grammatical functions (49.7%), then spoken form (39.5%), and finally written form (39.4%).
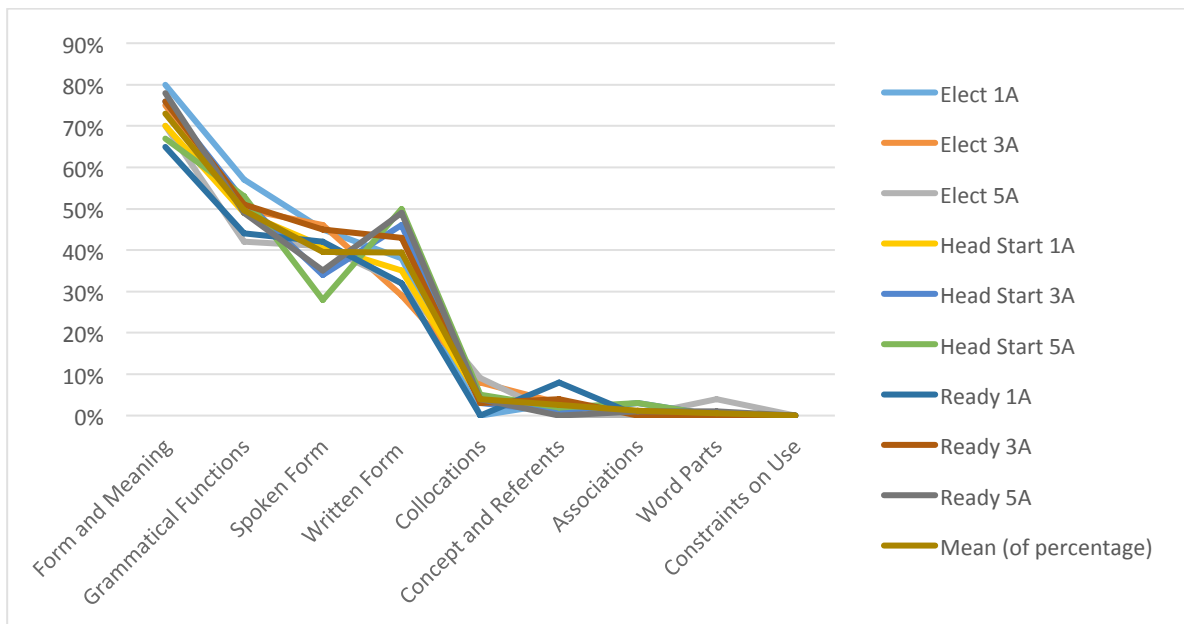
Figure 2: Vocabulary aspects in Hong Kong primary English textbooks

Below we illustrate the four most prominent vocabulary aspects with a corresponding activity extracted from the textbooks based on Brown's activity-aspect definitions in Table 6:

Aspects of vocabulary knowledge	Definitions
Form and meaning	An activity that involves matching forms and meanings (expressed as, for example, definitions or pictures). An activity that involves recalling forms from meanings or recalling meanings from forms. An activity that explains the meanings of items.
Grammatical functions	An activity that requires students to manipulate a word in some way with respect to a sentence, for example, by adding it to the sentence in the correct position. An activity that explains the patterns an item appears in or that asks learners to find these patterns. Activities that simply ask students to use the items in speech or writing are not included.
Spoken form	An activity that requires students to notice the pronunciation of an item or to produce its features. An activity that involves matching the spoken form the written form. Activities that include the pronunciation of items (for example, in a listening passage), but draw no special attention to the form are not included.
Written form	An activity that focuses students' attention on the spelling of items. Activities that involve reading or writing the items as part of the process of doing something else are not included.

Table 6: Vocabulary activity-aspect definitions (Based on Brown, 2010)

i.   Form and Meaning (73%)

This category refers to any activity that involves matching forms and meanings, expressed using, for example, definitions or pictures. In the following question, students have to find clues from the reading passage on p.63, and choose the correct picture to match 'kilt" with the correct picture. This activity requires students' vocabulary knowledge of form and meaning.

Figure 3: "Form and meaning" as shown in a vocabulary activity
(*Longman Elect 1A,* p.65)

Here we may note that the choice of vocabulary is not culturally appropriate to the Hong Kong context, since a kilt is not part of children's experience (nor it is a useful target item).

ii.   Grammatical Functions (49.7%)

Grammatical functions refer to any activity that requires students to manipulate a word in some way with respect to a sentence, for example, by adding it to the sentence in the correct position. As shown in Figure 4, students are learning to use "do" and "does" in the correct position in a question, and to use gerunds in sentences after the verb "like", for example "I like doing ballet.". Then they have to talk about the activities Andy's friends like doing using the words given.

Figure 4: "Grammatical functions" as shown in a vocabulary activity
(*Oxford Ready 3A,* p.7)

iii.   Spoken Form (39.5%)

Spoken form refers to any activity that requires students to notice the pronunciation of an item. This activity requires students to correctly pronounce the /v/ sound as in "Vincent", "Visual", "Victor", and "voice".
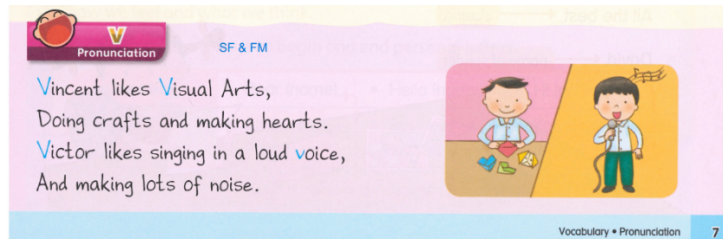
Figure 5: "Spoken form" as shown in a vocabulary activity (*Head Start 3A, p.7*)

iv.   Written Form (39.4%)

Written form refers to any activity that focuses students' attention on the spelling of items. In this activity, students have to fill in the characteristics of the giraffes featured in the fact sheet, according to the reading passage.
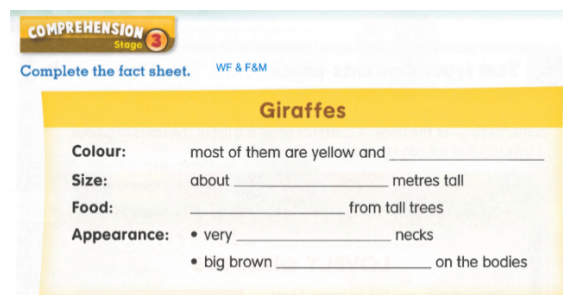

Figure 6: "Written form" as shown in a vocabulary activity (*Head Start 3A, p. 60*)

Research question 2 asks why only some aspects are primarily covered whereas other aspects are not emphasized. To address this question, we draw upon clues from the Hong Kong Primary English Curriculum devised by the Hong Kong Education Bureau.
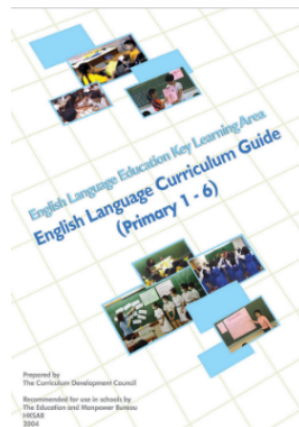

Figure 7: English Language Curriculum Guide (Primary 1-6) in Hong Kong

Some key words in the curriculum explain why the four aspects of vocabulary knowledge are primarily covered.

- *... Vocabulary is best introduced **in context**. (p.18)*
- *... Tasks provide **authentic contexts** for vocabulary use... (p.18)*
- *… express a wide range of ideas and experiences for **communicative purposes**… (p.19)*

- *… **Communicative functions** set out what learners should be able to do in English through **listening, speaking, reading and/or writing**… (p.19)*
- *… Learners need to use a range of **grammar items and structures** to serve various **communicative functions**… (p.21)*

The Bureau advises that vocabulary is best introduced in an "authentic" context, so that students are taught to express a wide range of ideas and experiences for communicative purposes through listening, speaking, reading and/or writing. Moreover, they need to use a range of grammar items and structures to serve various communicative functions.

In short, the curriculum is about "communicative functions", "language skills" (reading, writing, listening, speaking), and "grammar", as shown in Figure 8.

Figure 8: Key learning outcomes in the English Language Curriculum Guide (Primary 1-6) in Hong Kong

In order to have teaching materials approved by the Bureau, developers aim to follow the curriculum framework with these key learning outcomes in the design of textbooks.

Research question 3 asks how Chinese-English bilingual children acquire more aspects of vocabulary knowledge. Here it is vital to consider the children's language environment. As an international city with rich linguistic culture and political history, Hong Kong has three principal languages, including Cantonese, English and Putonghua. While a large number of Hong Kong people are trilingual speakers of Cantonese, Putonghua and English to different degrees, Cantonese remains the most widely spoken language in Hong Kong, with more than 85%[2] of the Hong Kong population speaking Cantonese as their L1. Since 1997, the policy of the Hong Kong Special Administrative Region has been to promote "biliteracy and trilingualism" in education, which aims to enable students to become biliterate in written Chinese and English and trilingual in spoken Cantonese, English and Putonghua.

In our view the use of L1 in textbooks needs to be promoted. However, some parents and teachers worry that this will impede the acquisition of the second language. Research has shown that this is a misconception, and the first language can be helpful in learning English. 'Translanguaging' is a growing trend which encourages learners to use their whole repertoire of languages, whatever they are learning. In this perspective, using L1 to support L2 learning

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[2] https://www.censtatd.gov.hk/en/

in the classroom is not only legitimate, but to be encouraged on the grounds that it leads to more effective learning (Li, 2018).

The textbooks reviewed in this study take a "monolingual" approach to the teaching of English, eschewing any use of Chinese. The one exception to this rule is that the *Oxford Ready* series includes a self-learning booklet in bilingual format designed to be used at home. The following page extracted from the self-learning booklet serves as an illustration of the use of L1 in teaching L2. The selected vocabulary, "a cinema" and its example sentence comes with their Chinese translation. "A cinema" goes with "電影院", and "I watch a film in a cinema." goes with "我在電影院看電影."
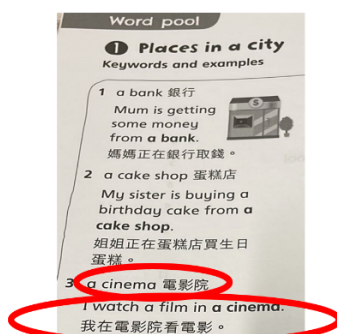

Figure 9: L1 (Chinese) gloss provided in L2 (English) primary textbook's self-learning booklet in Hong Kong

Such materials are consistent with the research findings cited earlier, whereby glosses in students' first language are conducive to more effective L2 vocabulary learning (Hui et. al., 2016).

Future Research

This study is part of a larger project aiming to build the first Hong Kong primary English textbook corpus. To create the corpus, we will include data from 84 textbooks in 7 major series across primary 1 to 6. Other than English, this method can be extended to diverse target languages to create multilingual textbook corpora.

This corpus allows us to address a number of impactful research questions:
- What are the target vocabulary items and the total number of target vocabulary items in each level? Are they age-appropriate and culturally appropriate?
- What is the frequency of individual vocabulary items across textbooks for each level?
- What are the parts of speech of each word (e.g. noun, verb, adjective, adverb, preposition, determiner, etc.)?
- What are the lexical diversity indices (e.g. VOCD, MATTR, etc.)?

From the corpus we can see the similarities and differences between these vocabulary items, paving the way for further research in whether the differences are due to children's age, the themes required in the curriculum, or others. The corpus also shows the lexical diversity indices which are vital to reveal whether the textbooks are too difficult or too easy when we compare the lexical diversity between the textbooks and the children's everyday discourse.

Conclusion

The design of Hong Kong primary English textbooks is governed by the "communicative" approach in the curriculum recommended by the Education Bureau. Under such approach, the vocabulary activities primarily focus on "Form and Meaning" knowledge aspect, followed by "Grammatical Functions", "Spoken Form", and "Written Form".

For a balanced development, textbook publishers and industry collaborators may consider enlarging the spectrum of vocabulary knowledge in textbook activities. At present, L1 glossing is available in the self-learning booklet that goes with the textbook in one of the series examined. This approach is informed by childhood bilingualism research showing that "translanguaging" is a growing trend which encourages learners to use their whole repertoire of languages.

Moreover, the creation of our Hong Kong primary English textbook corpus enables us to conduct a systematic analysis of vocabulary in textbooks and identify the gaps in vocabulary knowledge. The findings can inform teaching and learning of vocabulary in bilingual children. The corpus answers many important research questions for the benefit of childhood L2 literacy development. In future, we can also compare materials with or without L1 support and see how effective they are as a source of input for bilingual children.

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Contact email: chrislaw@cuhk.edu.hk