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Do kindergarten teachers possess adequate knowledge of basic language constructs to teach children to read English as a foreign language?

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Abstract
The contribution of teacher knowledge to learning outcomes at the beginning stages of literacy acquisition is of growing concern because the ability to provide quality instruction is central to successful literacy acquisition, particularly for pupils with dyslexia. To date, the majority of research has focused on teachers of English as a first language. Yet, English is the most widely taught foreign language today. The present study extends the exploration of teacher knowledge by probing two heretofore unexamined groups of teachers who are responsible for teaching beginning stages of literacy in English as a foreign language: regular class teachers who are non-native English-speaking ($N = 96$) and native English-speaking teachers ($N = 24$) working in the kindergarten setting in Hong Kong. As these two teacher groups serve as gatekeepers of beginning English as a foreign language literacy for kindergarten children in Hong Kong, it is crucial to gather information about the depth and quality of their teacher knowledge. This information can be instrumental to improving the quality of beginning literacy instruction in English and assisting early identification of dyslexia. Both groups completed the basic language constructs survey (Binks-Cantrell, Joshi, & Washburn, *Annals of Dyslexia*, 62, 153–171, 2012a). Results showed while native English teachers performed significantly better than non-native English teachers, total percentage correct scores were below 50%, except for phonological awareness tasks. All teachers scored higher in items requiring syllable as opposed to phoneme manipulation. Only teacher type predicted teachers' performance on the survey. The need for quality instruction, particularly for children at-risk for dyslexia or those struggling at the beginning stages of literacy acquisition, is addressed.

Keywords Basic language constructs · Content knowledge · English teachers

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Introduction

Researchers in the field of education are not often in the position to directly interact with young children. Except in e-learning contexts where children are directly engaged with the materials designed by the researchers. Any knowledge and skills that researchers have identified to be critical for aspects of child development must be acquired and conveyed by teachers. As a result, teachers' content knowledge and pedagogical skills become vital tools for bridging the gap between educational research and teaching practice (Adger, Snow, & Christian, 2018; Snow, Griffin, & Burns, 2005). Strong correlations have been found between teacher's content knowledge of language concepts and successful classroom practices, which consequently impact learners' reading achievements (Carlisle, Correnti, Phelps, & Zeng, 2009; Lane et al., 2009; McCutchen et al., 2002; Moats, 1994, 2009, 2014; Piasta, Connor, Fishman, & Morrison, 2009; Spear-Swerling & Sternberg, 2001).

Thus, effective reading instruction is reliant on teachers' knowledge of relevant language concepts (IRA, 2017; IDA, 2019; Moats, 1994, 2014; National Institute of Child Health and Human Development, NICHD, 2000; Snow et al., 2005; Spear-Swerling & Sternberg, 2001). Due to the high level of inconsistency of phoneme-grapheme correspondences in English, the need for solid knowledge of language concepts is even more essential for teachers of early literacy in English. These concepts, or basic language constructs as some researchers have called them (NICHD, 2000; Joshi et al., 2009), encompass the conceptual knowledge and skills necessary for understanding the structure of the English language and how to most effectively teach it. They include knowledge about phonological and phonemic awareness, the alphabetic principle, phonics instruction, and morphology and morpheme awareness, all of which serve as a foundation for successful reading acquisition (Adams, 1990; IDA, 2019; National Reading Panel, 2000). According to the International Dyslexia Association (2019), "Inadequately prepared teachers place students, themselves, and school systems at risk of failure (International Dyslexia Association, 2019, p. 15). For this reason, the present study examines knowledge of Basic Language Constructs amongst teachers of early literacy in English as a foreign language (EFL) in Hong Kong. This teacher population is targeted because they are charged with the fundamental task of setting the English language learning foundation upon which teachers in primary school can then graft reading skills. Knowledge of basic language constructs is targeted because prior research has indicated that teachers who do not have this knowledge will be poorly equipped to teach early literacy skills, and to identify learners who may have dyslexia (Moats, 1994, 2009). Binks-Cantrell et al. (2012a) referred to this phenomena as the *Peter Effect*, claiming that, "teachers cannot pass on understanding of the basic language constructs considered essential for early reading success when they do not possess that understanding (p.527)." A better understanding of the knowledge base of these teachers who play a critical role in laying the foundation for successful English literacy acquisition can serve as the impetus for a re-evaluation of teacher training practices.

A review of the existing literature shows that while there have been numerous studies indicating the types of language knowledge that are linked to children's literacy development, the topic of teacher's content knowledge of basic language constructs has gleaned much less attention worldwide. One of the first studies examining teacher knowledge was conducted by Moats (1994). She developed a questionnaire that examined knowledge of language concepts such as speech sounds, correspondence between sounds and symbols, and morphemic units in words amongst a group of 89 native English teachers. She found that the teachers in her sample had limited content knowledge related to reading instruction. Findings from this

seminal study have been replicated in different English-speaking countries and amongst different participants, including pre-service teachers, in-service teachers, and teacher educators, with similar results (Bos, Mather, Dickson, Podhajski, & Chard, 2001; Moats, 1994; Spear-Swerling & Brucker, 2003; Washburn, Binks-Cantrell, Joshi, Martin-Chang, & Arrow, 2016). In general, both pre- and in-service teachers do not seem to be able to achieve total scores above 70%, with scores below 50% reported for specific subtests of ability, and even lower scores for questions tapping into skill knowledge (Washburn et al., 2016). Phonological awareness tasks, e.g., tasks involving syllable counting, have tended to score higher than phonemic awareness tasks, e.g., tasks involving the identification of specific sounds in words, and morphological awareness tasks (e.g., tasks involving the identification of meaningful units within a word) have generally scored lowest. In all instances, results indicated that in-service as well as pre-service teachers and teacher educators have insufficient understanding of the language concepts necessary to teach beginning reading instruction (Binks-Cantrell, Washburn, Joshi, & Hougen, 2012b; Joshi et al., 2009). These results have also been replicated amongst pre-service and in-service English as a foreign language teachers in non-English-speaking countries (Fuchs, Kahn-Horwitz, & Katzir, 2019; Goldfus, 2012; Kahn-Horwitz, 2016; Zhao et al., 2016).

In response to the widespread lack of sufficient teacher knowledge and practice standards, the International Dyslexia Association (IDA) recently introduced the Educators Training Initiatives Brief: Structured Literacy (2019). This comprehensive document is a response to the growing number of findings (see above) regarding the lack of teacher knowledge and its detrimental effects on at-risk and dyslexic learners. The brief delineates the components of effective research-based literacy instruction methods and areas of essential knowledge for teachers of literacy. While the document addresses the population of English language learners, it does not address the population of English as foreign language learners. Considering the fact that the majority of children in the world today must acquire literacy in more than one language (McBride, 2019), and that English is the most widely taught foreign language today (EACEA/Eurydice, 2012), this population warrants examination.

Extant studies have provided a good starting point for understanding teachers' readiness to teach children to read; however, an important issue remains unanswered: most studies have sampled their participants in English-speaking countries (i.e., L1 setting). Because of this, it is unclear the extent to which English as a foreign language teachers working in non-English-speaking countries possess adequate professional knowledge of basic language constructs. The present study extends the exploration of teacher knowledge of basic language constructs amongst English as a foreign language teachers by probing two heretofore unexamined groups of teachers, namely regular class teachers, i.e., non-native English-speaking teachers and native English-speaking teachers working in the kindergarten setting. As these two teacher groups are the initial gatekeepers responsible for laying the foundation for English as a foreign language acquisition amongst kindergarten children in Hong Kong, it is important to gather information about the depth and quality of their teacher knowledge relating to basic language constructs. If these teachers do not possess adequate knowledge of the basic language constructs, their ability to identify early signs of dyslexia and other learning difficulties will be compromised. Moreover, a lack of sufficient basic construct knowledge might indicate a need for more thorough and systematic training and supervised practice in language teaching as an integral component of teacher training or on-site training for teachers of English.

Addressing this issue is further important because currently, there are more children learning English as a foreign language than as a first language. In China alone, as of 2000,

there were 390.16 million English as a foreign language learners (Wei & Su, 2012). To meet the demand for early English exposure, kindergartens in major Chinese cities recruit native English-speaking teachers from abroad because these English teachers are perceived to have more authentic English than that of non-native English-speaking teachers. The native English-speaking teachers are also likely to be charged with the task of teaching children to read because Chinese parents tend to expect their children to learn to read early (sometimes as early as age three) compared with their European counterparts. Due to the large number of children involved, and parents' expectations of teachers of English, it becomes critical to examine the knowledge of basic language constructs amongst teachers working in this unique EFL setting. If teachers were found to have limited knowledge of the basic language constructs, this might subsequently impact their ability to teach children to read in English. Thus, it would be important for pedagogical leaders in schools to organize ongoing professional development training sessions so that their teachers could acquire the relevant knowledge online, or from teacher education institutes.

Addressing the issue of knowledge relating to basic language constructs also has important implications for the potential redeployment of human resources in schools. In the kindergarten context of Hong Kong, formerly a British colony and now a Special Administrative Region of the People's Republic of China (PRC), at least two types of teachers work in a kindergarten: (i) teachers of English who are responsible for teaching English as a foreign language in specific time slots. These teachers are not required by the education authority to possess teacher qualification and are not responsible for promoting children's whole-person development; and (ii) homeroom or class teachers who are required to be certified kindergarten teachers (minimum level of a certificate/diploma in early childhood education). These teachers are responsible for promoting the whole-person development of young children, and they interact with the children using the local language (henceforth class teachers). Although teachers of English may be less qualified than the class teachers in meeting the local entry qualifications as kindergarten teachers, the contractual terms offered to them are often more favorable than the terms offered to the latter group. The salary of a teacher of English who is native-speaking can be double that of the regular class teacher who is a non-native English-speaking teacher. A dilemma for schools is that despite their higher salaries, the native English-speaking teachers might not be able to interact properly, from a pedagogical perspective, with young children because they might not possess early childhood education qualifications. Due to tight financial constraints and concerns about the native English-speaking teachers' abilities to engage young children, in recent years, small scale kindergartens have started to jointly share their native English-speaking teachers (i.e., the native English-speaking teachers are hired part-time in each school), and to redeploy their own Chinese-speaking homeroom or class teachers with good English proficiencies who are non-native English-speaking teachers to interact with children in English in specific time slots. In a setting where children are exposed to English four times a week (20–25 min per exposure), the native English-speaking teachers and the non-native English-speaking teachers might each see the children twice a week, for example. A labor division issue then arises: who will be more qualified to teach children to read in English (the native English-speaking teacher who has the language skills, or the non-native English-speaking teacher who has a kindergarten teacher qualification)? Researching the knowledge of basic language constructs amongst both teacher types (native English-speaking teachers vs. non-native English-speaking teachers) will help address this issue.

The current study

The review above showed that examining the knowledge of basic language constructs amongst teachers of English working in an English as a foreign language setting is important given the vast number of kindergarten children involved, the potential negative impact of poor teacher knowledge on early identification of learners at risk, and the issue of effective redeployment of human resources. To fill this research gap, this study sought to examine the knowledge of basic language constructs in English amongst kindergarten teachers who teach English as a foreign language. We focused specifically on two types of kindergarten teachers working in Hong Kong: (1) native English-speaking teachers who are currently teaching English to young kindergarten children; and (2) Chinese-speaking class teachers who have been redeployed by their kindergartens to interact with children in English in specific time slots (non-native English-speaking teachers). We chose Hong Kong as the site of study because of its special relationship with the People's Republic of China (PRC). In addition to the number of kindergartens managed and/or owned by Hong Kong citizens in the PRC, educational practices in the city often serve as a reference point for other cities in China. To make comparisons with previous studies possible, we adopted the basic language constructs survey (Binks-Cantrell et al., 2012a) (see the "Methods" section for details). Specifically, our goals were to address the following issues:

1. What is the level of knowledge relating to basic language constructs amongst teachers of English as a foreign language in Hong Kong kindergartens?
2. Are there differences between the two teacher types (native English-speaking teachers and non-native English-speaking teachers) regarding patterns of performance in specific domains within basic language constructs? Will the teachers score higher on tasks that involve phonological awareness as opposed to phonemic awareness reflecting similar patterns found in previous studies (Binks-Cantrell et al., 2012a; Fuchs et al., 2019; Goldfus, 2012; Joshi et al., 2009; Kahn-Horwitz, 2016; Zhao et al., 2016)?
3. Can additional factors, such as teacher qualifications and teaching experience, contribute to knowledge of basic language constructs above and beyond teacher type (native English-speaking teachers vs. non-native English-speaking teachers)?

Whereas some prior studies have not found a positive contribution of academic qualifications and years of teaching experience as predictors of teacher's knowledge (McMahan, Oslund, & Odegard, 2019), others have (Bos et al., 2001; Kahn-Horwitz, 2016; Mather, Bos, & Babur, 2001). These variables were therefore included in our study.

Methods

Participants The participating teachers were recruited from an in-service teacher-training seminar, during which the participants were requested to complete a paper and pencil questionnaire addressing their knowledge about basic language constructs (see the "Questionnaire" section). The final sample included 24 native English-speaking teachers and 96 regular class teachers who have been redeployed by their kindergartens to interact with children in English in specific time slots (non-native English speakers). The majority of the teachers were female (91.8%), and their work locations cover all of the major geographic regions of Hong

Kong: the Hong Kong Island (3.3%), the Kowloon Peninsula (74.6%), and the New Territories (22.1%). The vast majority of our respondents had either a certificate/diploma in Early Childhood Education or a bachelor's degree in Early Childhood Education. Teachers who had not attained the minimum early childhood education qualification recognized by the Hong Kong Education Bureau were included in a category called unqualified teachers. In terms of working experience, the majority of teachers had either less than 2 years (35.2%) or between 3 and 5 years of working experience (40.2%). Table 1 presents demographic details for the participants split by teacher type, native and non-native English teachers. The table indicates that non-native teachers were significantly more qualified than the native teachers with regard to teacher training (Fisher exact = 20.77; $p < 0.001$).

Research tools

The questionnaire used in the present study consisted of two sections: one section gathering information on the participants' demographic details (e.g., their academic qualifications and years of teaching experience), and the other focusing on teacher knowledge of basic language constructs. The teacher knowledge section was adapted from the basic language constructs survey (Binks-Cantrell et al., 2012a), which was based on earlier surveys of teacher knowledge (Bos et al., 2001; Cunningham, Perry, Stanovich, & Stanovich, 2004; McCutchen et al., 2002; Moats, 1994). While the initial questionnaire was comprised of 46 items, which examined self-perception, knowledge, and skill in basic language constructs, the present study included 33 items and focused only on the categories of knowledge and skill in four areas of basic language constructs (phonemic-specific, phonological, phonics, and morphemic) due to time available for the participants to complete the survey. Knowledge-based items tapped into explicit knowledge of terms and concepts, whereas skill-based items assessed ability to perform specific language-related tasks, such as counting the number of syllables, phonemes, or morphemes in words. In addition, skill-based items addressed a range of skill levels of increasing difficulty (for example, words ranging from 1 to 4 syllables for syllable counting). Items that were categorized as phonemic targeted the perception or manipulation of individual sounds. Phonological items targeted perception or manipulation at the larger grain-sized levels (e.g., onset, rimes, and syllables). Phonics items dealt with the use of letter-sound correspondences, rules, and patterns of the written language needed to decode words in English. Morphological items tapped into the use of units of meaning within a word. The Cronbach's alpha score for the questionnaire was 0.80.

Data analysis The sample description was done using frequency counts and percentages. Mean percentage correct scores were calculated for (a) total survey (all items), (b) explicit knowledge items, (c) skills items, (d) phonological items, (e) phonemic items, (f) phonics items, and (g) morphological items. Differences between teacher types (native English teachers vs. non-native English teachers) and tasks (phonological, phonemic, phonics, and morphological) were examined using repeated measures ANOVA. This was followed by a post hoc simple effect analysis with Bonferroni correction for multiple testing. Multivariate linear regression models were used to examine predictors of teachers' knowledge and skills. Teacher type, years of teaching experience, and qualifications were the independent variables and total score, and scores on the knowledge and skills sections were the dependent variables. Predictors were hierarchically entered into each model. A p value of 0.05 or below was considered statistically significant. All analyses were performed using SPSS version 21.

Results

The present study examined the level of knowledge of basic language constructs amongst two types of EFL teachers in Hong Kong kindergartens: native English-speaking teachers and Chinese-speaking class teachers redeployed to interact with children in English during specific time slots who are non-native English teachers. We were first interested in exploring similarities and differences between these two groups of EFL teachers in their task performance. Table 2 presents descriptive statistics (means and standard deviations) for scores across tasks and amongst both teacher types. The results indicate that total percentage correct scores for all tasks in the study were well below 50% except for phonological awareness tasks, where the score was 80.5%. Tasks tapping into phonics knowledge and skills received the overall lowest score. Repeated measures ANOVA with teacher type (native English teachers vs. non-native English teachers) as the between factor and task type (phonological, phonemic, phonics, and morphological) as the within factor revealed a main effect for teacher type ($F(1, 43) = 16.55$, $p < .001$), with overall significantly higher scores for the native English teachers ($M = 64.07$, $SE = 3.96$ compared with $M = 45.54$, $SE = 2.52$). Also, a main effect was found for task ($F(3, 129) = 65.68$, $p < .001$). Phonological awareness was the easiest task collapsed over teacher type ($M = 89.67$, $SE = 3.47$ compared with $M = 50.25$, $SE = 3.34$ (phonemic); $M = 33.25$, $SE = 3.12$ (morphological); $M = 46.05$, $SE = 3.86$ (phonics)). The post hoc simple effect analysis revealed that there were significant differences between this task and the other three tasks

Table 1 Participant demographic information ($N = 120$)

Variable	Native English teachers ($N = 24$)		Non-native English teachers ($N = 96$)	
	N	Percentage	*N*	Percentage
School location				
Hong Kong	3	13%	1	1%
Kowloon	13	54%	77	80%
New Territories	8	33%	18	19%
Teacher gender				
Male	1	4%	6	6%
Female	23	96%	88	92%
Missing data	0	0%	2	2%
Academic qualification				
Unqualified	6	25%	1	1%
Certificate/higher diploma in Early Childhood Education (ECE) or equivalent	3	13%	39	41%
Bachelor degree in diploma in ECE or in Education	9	38%	43	45%
Postgraduate diploma or above	6	25%	12	13%
Missing data	0	0%	1	1%
Years of teaching				
Below 2 years	8	33%	35	37%
3–5 years	8	33%	39	41%
Above 5 years	8	33%	21	22%
Missing data	0	0%	1	1%

($p < 0.001$). The differences between the phonemic task and the phonological and morphological tasks were significant as well ($p < 0.001$), while the difference between the phonemic task and the phonics task was insignificant ($p = 1.00$). Finally, the difference between the morphological task and phonics task was significant ($p = 0.04$) (Fig. 1).

Next, we were interested in patterns of performance across tasks for both teacher types. The repeated measures ANOVA revealed a significant interaction between teacher type and task type ($F(3, 129) = 6.44$, $p < .001$). The post hoc simple effect analysis revealed that native English teachers outscored non-native English teachers on all tasks except for morphology, where the difference between teacher types was insignificant (Phonemic: $M = 66.67$, SE = 5.81 compared with $M = 33.82$, SE = 3.30, $p < 0.001$; phonological: $M = 97.40$, SE = 6.03 compared with $M = 81.93$, SE = 3.43, $p = 0.03$; morphological: $M = 32.47$, SE = 5.43 compared with $M = 34.03$, SE = 3.09, $p = 0.80$; and phonics: $M = 59.74$, SE = 6.70 compared with $M = 32.35$, SE = 3.82, $p = 0.001$). Within the non-native English teachers, the post hoc analysis revealed that phonological scores were significantly higher than all other scores ($p < 0.001$ for all three comparisons), with no significant differences between scores for all other comparisons ($p = 1.00$ for all comparisons) within this teacher type. However, a different pattern was found within the native English teachers: whereas phonological scores were significantly higher than all other task scores ($p < 0.001$ for all three comparisons), within this teacher type, morphology scores were significantly lower than all other task scores (compared with phonemic and phonological: $p < 0.001$, compared with phonics: $p = 0.006$). Phonemic and phonics scores were not significantly different from one another ($p = 1.00$). In sum, the interaction indicates that the difference between the teacher types varies as a function of the tasks: the difference in larger and in favor of the native English teachers for the phonemic and phonics tasks, while this pattern is less prominent for the phonological and morphological tasks.

As learning to read in English requires phonological analysis at the level of phonemes rather than just at the level of syllables (National Reading Panel, 2000; Wagner & Torgesen, 1987), we conducted further analysis to examine teachers' manipulation of syllables as opposed to phonemes. The idea is that if the teachers' performance at the level of phonemes is weaker than their performance at the syllable level, this would indicate that they are not prepared to equip young children with the knowledge and skills to analyze words at the level of phonemes. Table 3 presents descriptive statistics (means and standard deviations) for scores on syllable and phoneme counting amongst both teacher types. The analysis revealed a main effect for task type ($F(1,63) = 103$, $p < 0.001$) indicating that syllables were significantly easier to manipulate than phonemes. There was also a main effect for teacher type ($F(1,63) = 10.79$, $p = 0.002$) with native English teachers significantly outscoring the non-native English teachers. The interaction effect was insignificant ($p = 0.41$). Together these findings suggested that teachers of either type (native vs. non-native English teachers) encountered more difficulties in phonological analyses at the level of phonemes than at the level of syllables. Because learning to read requires analyses at the level of phonemes, both teacher groups seemed not fully prepared for the task of helping children to learn to read.

In our final step of investigation, we examined the contribution of teacher type, together with teacher qualifications and teaching experience, to performance in the basic language construct task. Within the factor of teacher qualifications, teachers with a Bachelor of Education degree (BEd) were chosen as the reference category; within the factor of years of experience, the category of less than 2 years of teaching experience was chosen as the reference category. Multivariate hierarchical linear regression analyses were used to examine the relative contribution of these variables

Table 2 Descriptive statistics for performance on all tasks by native and non-native English-speaking teachers

Task	All participants $N = 120$	Native $N = 24$	Non-native $N = 96$
Total score	31.74	44.19	28.63
	(20.9)	(27.56)	(17.67)
Explicit knowledge	35.24	48.21	31.99
	(21.3)	(24.5)	(19.19)
Skills	31.06	43.11	28.02
	(22.71)	(29.29)	(19.78)
Phonemic	41.85	66.67	33.82
	(23.80)	(15.37)	(20.30)
Phonological	85.71	97.40	81.93
	(20.88)	(5.78)	(22.60)
Morphological	33.65	32.47	34.03
	(17.80)	(21.28)	(16.87)
Phonics	39.05	59.74	32.35
	(25.00)	(26.20)	(20.90)

to the basic language construct total score (Table 4), as well as two sub-skills: explicit knowledge (Table 5) and skills (Table 6). In all of the three models, the only variable that contributed significantly to basic language construct knowledge and skills was teacher type, indicating higher scores for native English teachers, as compared with non-native English teachers.

Discussion

The present study examined the level of knowledge relating to basic language constructs amongst two populations of EFL teachers in Hong Kong who are charged with the task of preparing kindergarten children to learn to read in English: regular Chinese-speaking class teachers redeployed by their kindergartens to interact with children in English during specific time slots and native

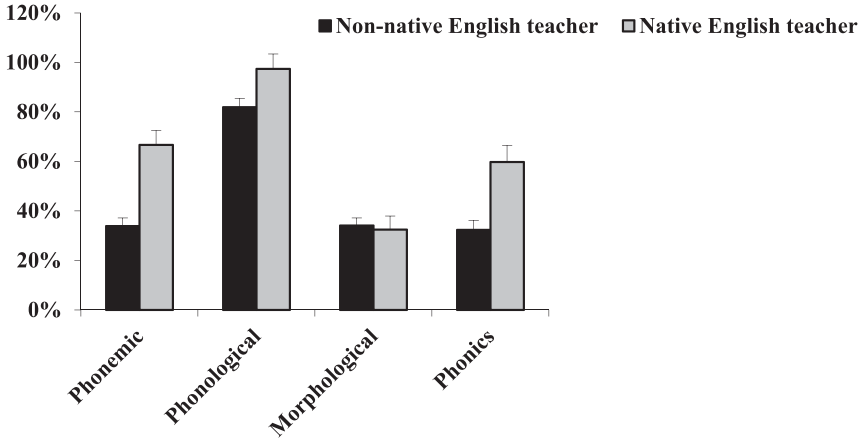

Fig. 1 Scores for teacher type by task

English-speaking English teachers. This issue is of utmost importance since teachers who do not have adequate knowledge of basic language constructs will not be able to prepare young pupils for the task of literacy acquisition in English and will not be able to recognize pupils who may be showing early signs of dyslexia or other neurologically based learning difficulties (IDA, 2019). The first question considered the overall level of teacher knowledge relating to basic language constructs. Total scores amongst both groups fell significantly lower than 50%. These results indicate an inadequate level of understanding of basic language concepts necessary for teaching beginning literacy skills in English, regardless of the native language of the English as a foreign language teacher. While this finding is in line with similar findings for early literacy teachers in both English as first language (Bos et al., 2001; Cunningham et al., 2004; Mather et al., 2001; Moats, 1994; Piasta et al., 2009; Spear-Swerling & Brucker, 2003) and EFL settings (Goldfus, 2012; Kahn-Horwitz, 2015), as well as amongst pre-service teachers (Fielding-Barnsley, 2010; Washburn, Joshi, & Binks-Cantrell, 2011), it portends very poorly for early literacy learner outcomes. This lack-of-knowledge might not be so pronounced in situations where the teachers are given a ready-made research-based reading program to teach, because teachers can learn about the structure of language when they use a well-informed, evidence/research-based program. However, in situations where the teachers use a program that is not research-based, they risk becoming further entrenched in erroneous knowledge and poor methodology. Moreover, if teachers are expected to create their own school-based literacy curriculum, as in the case of Hong Kong, the lack of a solid knowledge base of basic language constructs might prevent the teachers from creating a sound beginning literacy program. This, in turn, will have deleterious effects on the literacy outcomes of young children (e.g., Darling-Hammond & Baratz-Snowden, 2007; Moats, 2014). Moreover, without sufficient basic construct knowledge, these beginning EFL teachers (both native and non-native) may not be able to recognize early signs of dyslexia in their young pupils.

Because these teachers are already practicing teachers, further professional development opportunities should be encouraged which include both practical and theoretical pedagogical training, and which emphasize the importance of oral language skills as a precursor to literacy acquisition. Previous studies examining the impact of teacher training of specific language structure knowledge have shown that pre-service, as well as in-service teachers, who received this type of training, even for short periods of time, tended to score higher on tests of teacher knowledge (McMahan et al., 2019; Purvis, McNeill, & Everatt, 2016). Moreover, teachers who have received intensive training in basic language constructs deepen their knowledge, which has a direct impact on teacher practice and learner achievements (McCutchen et al., 2002). Similar findings have also been reported for English as a foreign language teachers who participated in a semester course focusing on orthographic-related content. Gains in post training scores were reported and retained 4 months after the course was over (Kahn-Horwitz, 2016). Moreover, teachers who lack basic construct knowledge will not be able to teach skills that they themselves do not possess (Binks-Cantrell et al. (2012a). Thus, future studies should specifically explore the types and content of professional development opportunities suitable for EFL teachers in Hong Kong, while taking into consideration the fact that currently there are no specific regulations regarding the qualifications of teachers of English in local kindergartens,

Table 3 Descriptive statistics for performing syllable and phoneme counting by native and non-native English-speaking teachers

Task	All participants	Native English teachers	Non-native English teachers
Syllable counting	82.82 (22.45)	96.64 (6.25)	77.93 (24.01)
Phoneme counting	45.49 (22.43)	54.62 (21.57)	42.26 (22.04)

Table 4 Hierarchical linear regression analysis for total score

	Model 1			Model 2			Model 3		
Variable	*B*	SE	*β*	*B*	SE	*β*	*B*	SE	*β*
Teacher type	15.56	4.56	0.30***	12.32	5.14	0.24*	12.23	5.18	0.24**
Qualification (certificate)				−5.73	4.16	−0.13	−5.35	4.29	−0.12
Qualification (post grad)				2.32	5.51	0.04	1.38	5.78	0.02
Qualification (unqualified)				5.58	8.77	0.06	5.47	8.83	0.06
Experience (3–5 years)							0.34	4.31	0.01
Experience (> 5 years)							3.22	5.07	0.07
R^2	0.09			0.12			0.12		
F for change in R^2	$F(1,118) = 11.64$, $p = 0.001$			$F(3,115) = 1.07$, $p = 0.37$			$F(2,113) = 0.23$, $p = 0.80$		

and therefore, teachers may have little incentive to receive further training requiring them to use their own expenses and time.

Our results also indicated that while non-native English teachers are all qualified kindergarten teachers compared with native English teachers, at this stage, it might be problematic to involve non-native English teachers in the teaching of reading because they showed significantly lower scores on crucial measures of basic language constructs as compared with native English teachers. If budget is an issue for kindergartens, encouraging non-native English teachers to receive on-site and off-site professional development training with guided practice focusing on basic language constructs would help these teachers close the gap in the professional and language knowledge needed to provide high quality English as a foreign language instruction. Moreover, the use of research-based literacy programs for non-native English language learners would further support a positive and productive learning experience for pupils and teachers.

Our second research question examined patterns of performance amongst the English as a foreign language teachers. Phonological tasks received the highest scores in both groups, and morphological tasks received the lowest scores, with phonics and phonemic scores somewhere in the middle for both teacher types. Phonological tasks involve recognizing and manipulating words at the syllable level, as opposed to phonemic tasks, which target the phoneme level. Developmentally, the ability to manipulate words at the syllable level solidifies prior to the ability to manipulate phonemes (Adams, 1990), although we would assume that adults would be able to perform manipulation tasks on both linguistic units with similar ease. However, similar discrepancies have been noted in other studies amongst both native English and non-native English speakers, as well as amongst in-service and pre-service teachers (Binks-Cantrell

Table 5 Hierarchical linear regression analysis for explicit knowledge score

	Model 1			Model 2			Model 3		
Variable	*B*	SE *B*	*β*	*B*	SE *B*	*β*	*B*	SE *B*	*β*
Teacher type	16.22	4.64	0.31***	14.23	5.25	0.27**	14.30	5.19	0.27**
Qualification (certificate)				2.39	4.25	0.05	4.40	4.30	0.10
Qualification (post grad)				8.19	5.63	0.14	6.83	5.79	0.12
Qualification (unqualified)				6.86	8.96	0.08	6.59	8.86	0.07
Experience- 3–5 years							6.55	4.32	0.15
Experience- >5 years							10.53	5.08	0.21
R^2	0.94			0.12			0.15		
F for change in R^2	$F(1,118) = 12.22$, $p = 0.001$			$F(3,115) = 0.78$, $p = 0.51$			$F(2,113) = 2.37$, $p = 0.10$		

Table 6 Hierarchical linear regression analysis for skills score

	Model 1			Model 2			Model 3		
Variable	*B*	SE *B*	*β*	*B*	SE *B*	*β*	*B*	SE *B*	*β*
Teacher type	15.09	5.02	0.27***	11.70	5.14	0.24*	11.54	5.69	0.21*
Qualification (certificate)				− 7.37	4.59	− 0.16	− 7.52	4.74	− 0.16
Qualification (post grad)				0.76	6.05	0.01	− 0.09	6.35	0.00
Qualification (unqualified)				5.31	9.63	0.06	5.26	9.71	0.06
Experience (3–5 years)							− 1.80	4.76	− 0.04
Experience (> 5 years)							0.87	5.58	0.02
R^2	0.07			0.03			0.00		
F for change in R^2	$F(1,117) = 9.04$, $p = 0.003$			$F(3,114) = 1.17$, $p = 0.34$			$F(2,112) = 0.14$, $p = 0.87$		

et al., 2012a; Bos et al., 2001; Cheesman, Mcguire, Shankweiler, & Coyne, 2009; Spear-Swerling, Brucker, & Alfano, 2006; Washburn et al., 2011; Zhao et al., 2016). Washburn et al. (2011), for example, reported scores of 91% accuracy for syllable identification as opposed to 58% for phoneme identification amongst pre-service teachers. Moreover, phonics and morphology scores for the same group were reported to be below 50%. As the ability to decode words is significantly related to the ability to segment words into phonemes (Adams, 1990; Morais, 2003; Yeung & Ganotice, 2014), this finding also portends poorly for beginning literacy teachers of English as a foreign language. If they themselves struggle with identifying the phonemes that comprise words (performance at the level of phonemes was below 50% for both teacher types), how can they be expected to teach young children this essential literacy skill? Thus, the need to provide beginning literacy teachers of English as a foreign language in Hong Kong with basic phonological skills and knowledge is more than apparent. This task should be the responsibility of kindergarten teacher education programs, since regular kindergarten teachers who are non-native English speakers are then expected to teach beginning English as a foreign language as a part of their job requirements. Moreover, since teacher education has been found to strengthen basic language construct knowledge amongst pre- and in-service teachers even months after the completion of the training course (Kahn-Horwitz, 2016), a basic English language training program should be developed for both native and non-native English teachers prior to allowing them to teach beginning English as a foreign language in kindergarten, in order to ensure that they have the proper training. This program should also stress the importance of building strong oral language skills in English amongst the learners as a prerequisite to literacy instruction, including attention to building lexical knowledge as well as phonological awareness skills. One potential obstacle in creating such a professional development program is that specialists in reading development usually work in the psychology department rather than in the early childhood education department, at least in the case of teacher education institutes in Hong Kong. Concerted efforts between reading specialists and early childhood education experts would be needed to create a professional development program that equips teachers with knowledge of basic language concepts relevant for the kindergarten context.

The third question examined the contribution of academic qualifications and years of teaching experience to teachers' performance on the basic language constructs survey. The most significant predictor was teacher type. Neither academic qualifications nor teaching experience was found to contribute significantly to our outcome variables (total score, performance on items relating to knowledge, and performance on items relating to skills). In other words, having degrees and/or

certifications does not guarantee that the teachers have learned the science of reading. These findings are in line with earlier findings examining teacher knowledge of English word structure amongst a group of pre- and in- service special education teachers, where prior experience with teaching reading was not found to influence teachers' ability to perform grapho-phonemic segmentation tasks, although specific instruction about word structure was found to contribute (Spear-Swerling & Brucker, 2003). Our findings also reflect findings from a recent study, which examined the link between knowledge about linguistic constructs and professional development amongst 347 in-service teachers. The only contributor to the basic construct knowledge of the teachers was found to be professional development; other contributors (prior experience and training) were not found to be significant (McMahan et al., 2019). Taken together, these findings suggest that certain types of knowledge cannot be acquired on-site (in the school), and one can only surmise, may not have been covered in existing teacher education programs. According to Educators Training Initiatives Brief (IDA, 2019), these topics must be directly and explicitly taught in specialized professional development programs.

Conclusion

This study documented that irrespective of their academic qualifications and teaching experience, native English speaking and non-native teachers of English in Hong Kong kindergartens generally performed poorly on tasks measuring basic language constructs knowledge. While these findings replicated findings of earlier studies showing that teachers generally have low levels of basic language constructs knowledge, the situation in Hong Kong is further complicated by the fact that children are taught the foundational stages of English as a foreign language literacy by two different sets of teachers. Whereas the native English teachers exhibited better performance in the aforementioned area as compared with non-native English teachers, the overall scores for both sets of teachers were relatively low. Considering the contribution of literacy skills to successful life outcomes, these results are a cause for serious concern and should serve as the impetus for a course of appropriate action including a re-examination of national teacher training standards. These findings reinforce the idea that knowing English as a first language does not guarantee that a teacher will have adequate knowledge or skills to be able to effectively teach beginning reading. Moreover, academic background alone is also not enough to guarantee that a teacher will have the required knowledge or skill base. As Cunningham et al. (2004) have suggested, "We should continue to turn our attention toward improving teacher preparation and teacher development in the area of early literacy (: 161)." And these efforts should be an integral component in teacher training and ongoing teacher support programs. As kindergarten teachers in Hong Kong are responsible to lay the foundation for successful literacy acquisition in English, ensuring that they have the necessary knowledge to be able to provide quality instruction is critical.

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