

Chinese EFL Teachers' Perception and Practice of Phonics Instruction

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Abstract—Phonics was introduced to Chinese mainland two decades ago. To gain an empirical insight into teachers' perception in teaching phonics to EFL students, this study draws upon data from a survey among 213 primary school EFL teachers in two Chinese provinces. The findings indicate that most teachers hold positive attitudes towards phonics, regarding it more as a word-attack skill. The improvement of teachers' educational background predicts better phonics teaching effect, yet they need systematic phonics knowledge. Besides, teaching material and teaching strategies are greatly correlated with the teaching effect. It concludes that phonics should be integrated into regular textbooks and effective teacher training is significant for better improvement of phonics instruction.

Index Terms—primary EFL teacher, phonics perception, teaching strategy, teaching effect

I. INTRODUCTION

In English-speaking countries, phonics instruction has been a component in teaching beginning readers for over 150 years (Sprague, 2008), alongside phonemic awareness, vocabulary, fluency, and comprehension. It has long been thought as a teaching strategy; today it is seen more as “content” within an overall teaching strategy (Sprague, 2008). In beginning reading instruction, students should understand a wide range of complex, informative texts as quickly as possible (NGA Center & CCSSO, 2010). Phonics is an effective strategy to achieve this goal by helping students acquire the prerequisite skills to decode unfamiliar words encountered in increasingly complex texts (Norman & Calfee, 2004). Without phonics knowledge and skills, it is difficult for young students to learn to read alphabetic language (Zipke, Ehri, & Cairns, 2009). Many researchers have verified through experiments that phonics has a positive effect on learners' literacy, spelling, and phonemic awareness (Flesch, 1981; Gwendolyn, 1998; NRP, 2000; Buckland & Fraser, 2008). McArthur et al. (2018) stated that phonics could help improve the accuracy of word reading, non-word reading accuracy, fluency, reading comprehension, spelling, letter-sound knowledge, and speech output of students with reading difficulties. Compared with the native learners, Chinese students as EFL learners are more struggling with reading while phonics enables them to develop reading skills (Wright C. & Wright J., 2016).

Phonics was introduced to Chinese mainland at the beginning of the 21st century when children started formal English learning at 6 or 8 years old, a lower age than that before National English Curriculum Standards for Compulsory Education (Trial version) was issued by Ministry of Education (MOE) in 2001. Its new version (2011) states that pupils should be able to “understand basic spelling rules, and decode simple words accordingly” since vocabulary is the basic building block of reading. Furthermore, it lists the amount of reading and level of reading comprehension that pupils should achieve at different grades. Therefore, students need to develop their decoding ability including script, phonemic awareness, and blending skills (Wang & Chen, 2016).

However, unlike native English teachers in North America, EFL teachers in China tend to consider phonics comprehensively (CERA, 2021). Phonics is viewed not only as knowledge about the letter-sound correspondence relationship, but also as an integral part of teaching pronunciation (Feng, 2010). Regarding phonics as a way of word identification, educators often compare phonics with International Phonetic Alphabet (IPA) which has been universally used to teach junior high school students (Grade 7-9) in China, resulting in debates about their respective pros and cons (Ye, 2013; Cao, 2017). It is proposed that lower graders learn phonics first, and then IPA as they move to higher grades, so as to adapt to secondary school English learning more easily (Liang and Meng, 2010).

As phonics is gradually adopted for primary English literacy improvement (Huang, 2013; Gao, Wang, & Lee, 2020), a growing number of researchers studied phonics teaching principle and application in China's EFL class, and found that problems still exist (Hou, 2019) due to inefficient phonics knowledge and inaccurate language processing (Moats & Foorman, 2003; Rayner, et al., 2001). Hence, it is necessary to explore EFL teachers' perceptions and practices of phonics, and the reasons behind them.

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II. THE RESEARCH ON SYSTEMATIC PHONICS INSTRUCTION AND TEACHERS' PERCEPTION

Some English-speaking countries have clarified the content of early reading and the type of knowledge teachers must teach. In Australia, National Inquiry into the Teaching of Literacy (2005) emphasizes the importance of explicit synthetic phonics. In the United Kingdom, the Rose Report (2006) recommends that early reading teaching incorporate phonics into the primary school literacy curriculum. In the United States, the National Reading Panel (2000) advocates teaching systematic phonics based on research findings through meta-analysis (Ehri, et al., 2001) and statistical support (De Graff, et al., 2009). Systematic phonics includes two key elements (NRP, 2000). One is explicit teaching content (usually referring to a complete set of phonological correspondence knowledge) and the systematic implementation of phonics instruction; the other is a clear teaching procedure to train students' spelling ability. The basic phonographic correspondence training which is mixed randomly in other reading programs is regarded as unsystematic phonics instruction. A decoding text is also necessary to practice the phonic rules (Kang & Chen, 2012).

Teachers' perception refers to their understanding of the teaching essence, reflecting their teaching attitudes and expectations (Borg, 2003). As teaching is a cognitive activity, teachers' perception will greatly impact their classroom decisions (Shavelson & Stern, 1981; Tillema, 2000). Teachers' knowledge (Carlisle, et al., 2009; McCutchen, et al., 2009), on the other hand, will affect students' reading performance. Thus, the result of systematic phonics instruction depends to a large extent on teachers' phonics knowledge and perceptions (Piasta, et al., 2009).

The flourishing researches on phonics in China since 2010 mainly explored its function, effect, and strategies in teaching reading and vocabulary (Hou, 2019), but few studies have examined teachers' knowledge and perception of phonics (Lin, 2018). Zhao et al. (2016) compared Chinese primary school teachers' language knowledge and skills, indicating that they were less capable in explicit knowledge of sub-lexical items (phonemes, morphemes, and phonological awareness) than implicit skills (syllables). Tu and Su (2011) gathered data from primary school teachers in Tainan of China through a questionnaire, concluding that teachers' beliefs and practices of phonics were consistent, but their research didn't cover the influential factors of phonics teaching.

In practice, Chinese EFL teachers tend to teach phonics without careful plan and continuity, some even misunderstand phonics (Cao, 2017). Given that teachers' insufficient and unsystematic phonics knowledge would produce a negative impact on students (Piasta, et al., 2009; Yi, 2013; Chen, Ja, & Seng, 2020), it is important to explore teachers' phonics preparations for further refinement and pertinence. Teachers' perception is an established term used to describe the personal, invisible aspects of teacher work. Hence, research on phonics cognition should not only state what teachers know and believe, but also examine the impact of invisible factors on what teachers do (Borg, 2003). Target at in-service primary EFL teachers in two programs in Ningxia and Shannxi provinces, China (See Kang & Liang 2018, for details), this paper aims to answer the following two questions:

- 1) What is the status quo of Chinese EFL teachers' perception and practice?
- 2) How is the effect of phonics teaching and what are the influential factors?

III. METHOD

A. Survey and Procedure

1. The Questionnaire

To answer the research questions, a questionnaire (in Chinese) was designed with reference to that of Tu and Su (2011). Section 1 was about participants' general information in the form of single choice and multiple choices; Section 2 contained four constructs: phonics perception (9 items), phonics practice (12 items), phonics teaching effect (6 items), and difficulty of phonics teaching (7 items) in the form of a 5-point Likert-Scale from 1 (strongly agree) to 5 (strongly disagree). Data were collected through an anonymous online survey hosted on Wenjuanxing (a popular website for questionnaire in China).

2. Pilot Testing

To ensure the quality of the scale, a pilot testing was conducted in June 2020 and a total of 101 questionnaires were returned. According to the data processed by SPSS 24.0, the Cronbach α reached 0.897, greater than 0.8; the KMO value reached 0.753, indicating the structure of the scale was eligible.

3. Data Collection

A formal survey was conducted in July 2020 and a total of 282 questionnaires were returned, including those in the pilot testing. Among them, 69 questionnaires were deleted for insufficient answer time, highly consistent answers or reverse data questions, and 213 valid questionnaires ($n=213$) were finally obtained with an effective retention rate of 73.7%.

4. Data Analysis

SPSS 24.0 was used to analyze the data. Enumeration data were described by frequency and constituent ratio, and measurement data were described by mean \pm standard deviation. Exploratory factor analysis was used to evaluate the construct validity of the scale. Cronbach alpha coefficient was used to evaluate the reliability of the questionnaire, and

the correlation between different variables was analyzed by linear regression.

B. Participants

The majority of participants were in-service primary EFL teachers from Ningxia Hui Autonomous Region and Shannxi province where one of the authors of this paper conducted Phonics-Oriented Training-of-teachers Program and Phonics-oriented Training-of-trainers Program during 2005-2010 (See Kang & Liang, 2018 for details).

Among 213 participants, half of them (50.2%) are 26-35 years old; 82.6% have bachelor's degrees (71.4% major in English); less than half (47%) have over 10-year English teaching experience. Most teachers obtained their first degree in English language (including English education), but a few entered the teaching career from other majors such as Chinese, human resources, information technology, etc. 31.5% teachers work in rural schools, (27.7%) at county, and 28.6% at urban public schools. Most schools (83.6%) start English courses from Grade 3 (8 years old), while a few from Grade 1 (6 years old).

Most participants teach different grades concurrently with workload of 3-4 periods per grade each week. In regards to the textbooks, more than half of schools (56%) use Foreign Language Teaching and Research Press (FLTRP edition), 23.47% People's Education Press (PEP edition), 19.25% the Shaanxi Travel Edition, 4.2% Tsinghua University Press, and some use multiple versions of textbooks. Though some respond they use phonics textbooks, the specific titles are not mentioned.

In terms of phonics training, half of them (50.7%) have received phonics training, among whom, 41.7% received provincial training, 40.7% at county level, 29.6% at districts, and 15.7% at school level. The training time is largely different, but 71.3% lasted 1-2 weeks. Training methods include school-based training (47.2%), amateur training (38.9%), off-the-job training (20.4%) and online Training (26.8%).

TABLE 1
THE PERCENTAGE OF PHONICS TRAINING

	Items	Frequency	Percentage
The frequency of phonics training	A. 0 times	105	49.3
	B. 1~5 times	101	47.4
	C. 6~10 times	4	1.9
	D. more than 10 times	3	1.4
The level of phonics training (optional)	A. Provincial level	45	21.1
	B. District level	32	15.0
	C. Country level	44	20.7
	D. School level	17	8.0
	E. Others	5	2.3
The form of phonics training(optional)	A. Off-the-job training	22	10.3
	B. Amateur	42	19.7
	C. School-based	51	23.9
	D. Online	29	13.6
	E. Others	6	2.8
The duration of phonics training	A.1-2 weeks	77	36.2
	B.3-4 weeks	9	4.2
	C.5-8 weeks	5	2.3
	D.8+ weeks	17	8.0

IV. RESULTS

A. Reliability and Validity of the Questionnaire

1. Exploratory Factor Analysis

The exploratory factor analysis showed that the KMO value was 0.847 and Bartlett's spherical test result $R^2 = 3374.427$ ($P < 0.001$), suitable for factor analysis. Principal component analysis and maximum variation method were used for orthogonal rotation to extract common factors with eigenvalues > 1 . Items that did not meet the following conditions were removed (Wu 2010): the load factor was ≥ 0.40 on each factor; difference between the load factors was ≥ 0.15 on both factors.

After the 1st exploratory factor analysis, a total of 8 common factors were extracted and the cumulative contribution rate of variance was 63.219%. Since the load coefficient of item 28 was < 0.4 , it was deleted consequently. Meanwhile, the eighth factor was deleted for it only contained one item (Item 11). The 2nd factor analysis (KMO=0.849) was performed on the retained 32 items, showing that the cumulative contribution rate of variance was 62.115%, and a total of 7 common factors were extracted. The load coefficient of Item 8 was deleted for it was < 0.40 . A 3rd factor analysis (KMO=0.850) was done on the retained 31 items, and a total of 7 common factors were extracted. As a result, the cumulative contribution rate of variance was 63.293%. The loading of Item 29 was distributed into two common factors, so it was removed from the factor structure. The 4th exploratory factor analysis (KMO=0.850) was done on the retained 30 items, and 7 common factors were extracted. It indicated that the cumulative contribution rate of variance was 64.027%. Normally, each factor should involve at least 3 items, so Item 7 and Item 9 were deleted. The 5th exploratory factor analysis (KMO=0.861) was done on 28 items, and 6 factors were extracted. After the above exploratory factor

analysis, the measurement items contained in the seven common factors were approximately the same as the preliminary set, and the lithotripsy diagram showed that the slope appeared flat after the 6th common factor. The loading coefficient of each item factor was > 0.45 , and the loading range was $0.513 \sim 0.846$.

The KMO value was 0.850, greater than 0.800. After deleting the 6 items “7, 8, 9, 11, 28 and 29”, 6 common factors among the retained 28 items variables remained. As a result, the scale items were all suitable for factor analysis.

2. Analysis of Final Questionnaire Reliability

Generally, Cronbach alpha coefficients > 0.8 in total demonstrated good reliability of the questionnaire. Meanwhile, Cronbach alpha coefficients of each dimension should reach above 0.5. In this study, the total Cronbach α coefficient of the questionnaire was 0.896, and the Cronbach α coefficients of the 6 sub-constructs ranged from 0.685 to 0.898, indicating that the questionnaire had good internal consistency (Table 2).

TABLE 2
CONSTRUCTS OF THE SCALE

Construct	Sub-construct	Items	N of Items	Cronbach's Alpha
Perception	Phonics concept	1,2,3	3	0.685
	Phonics function	4, 5, 6	3	0.817
Practice	Teaching materials	10, 12, 13	3	0.766
	Teaching strategy	14-21	8	0.866
Teaching Effect	Teaching effect	22-27	6	0.898
Teaching difficulty	Teaching difficulty	30-34	5	0.760
Total			28	0.896

B. Descriptive Analysis

Mean and deviation reflect the status quo of teachers' perception and practice of phonics, with smaller scores for all test variables, indicating teachers' greater awareness or mastery of phonics.

1. Teachers' Perception of Phonics Instruction

In Table 3, the score of phonics perception is 1.8247 ± 0.54011 , showing that participants hold positive views about the role of phonics instruction in general. It also shows the majority of teachers understand the function of phonics (1.5055 ± 0.49589), and the significance of decoding and encoding skills through building phonemic awareness. It is surprising that Grapheme-Phoneme Correspondence (GPC) is not strongly agreed by most participants given that GPC is actually the core of phonics.

TABLE 3
TEACHERS' PHONICS PERCEPTION

Phonics perception	Minimum	Maximum	Mean	Std. Deviation
1. Phonics is a way to teach letter-sound correspondence.	1	5	1.76	0.805
2. Students will identify new words in primary textbooks automatically with certain letter-sound correspondence.	1	5	2.32	1.016
3. Phonics is a common way to teach reading comprehension.	1	5	2.35	1.092
4. Discrimination of phonemes is helpful for phonics (/g/ and /k/).	1	3	1.49	0.563
5. Phonics is to develop students' decoding skill.	1	3	1.5	0.572
6. Phonics is helpful for encoding skills.	1	4	1.53	0.603
Total	1	3.33	1.8247	0.54011

In terms of different types of GPC (see Table 4), participants prioritize short vowels (89.7%), vowel clusters (85.4%), long vowels ending in e (80.3%), single consonants (76.1%), two consecutive consonants make one sound together (63.8%), and consonant cluster (53.1%). The GPC of the semi-vowel (46.5%) and silent consonants are the least favorable or even ignored by participants (24.4%), possibly because of their low frequency in the primary textbooks. This acts as an indicator that participants select the content of phonics rationally and effectively to avoid wasting time on those less-frequent phonograms (Hua, 2016a).

TABLE 4
TEACHERS' RESPONSE TO DIFFERENT TYPES OF GPC

Types of GPC	Frequency	Percent (%)
Single consonants, such as b, c, d, f, g.	162	76.1
Short vowels, such as a/æ/, e/e/, i/i/, o/o/, u/u/.	191	89.7
Long vowels ending with silent e (a_e, e_e, i_e, o_e, u_e), such as cake.	171	80.3
Consonant cluster, such as br, cl, st, etc.	113	53.1
Vowel clusters, such as -ai, -ay, -ea-, -ee-, -oa-, -ow.	182	85.4
The pronunciation of the semi-vowel y, such as my, by, fly.	99	46.5
Vowels with r, such as ar, er, ir, or, etc.	115	54
Two consecutive consonants make one sound together, such as ch, sh, wh, ph, etc.	136	63.8
Silent consonants, such as m and b together, b is silent.	52	24.4

Note: These are multiple-choice items. The sum is more than 100%.

Similarly, the higher score of Item 3 (2.35 ± 1.092) in Table 3 indicates that some teachers perceive phonics more as a word identification or spelling skill than a reading approach, very different from native English teachers in North America.

2. Teachers' Practice of Phonics

TABLE 5
SEQUENCE OF GPC INSTRUCTION

	Frequency	Percent (%)
letter-sound→letter cluster→word→sentence	167	78.4
word→letter cluster→letter-sound	112	52.6
content and order of ordinary textbooks	74	34.7
letter-name first, then letter-sound	113	53.1
consonants first, then vowels	50	23.5
short vowels (i /i/) first, then long vowels (i /ai/)	69	32.4

Note. These are multiple-choice items. The sum is more than 100%.

Regarding the sequence of teaching phonics (Table 5), participants apply more synthetic phonics (78.4%) than analytical phonics (52.6%), partly because EFL learners have little vocabulary before they learn English at school.

Over half (53.1%) of teachers teach letter-name earlier than letter-sound in the belief that students should be able to differentiate the morpheme of each letter before they learn their sounds. Although researchers recommend teaching consonants and short vowels first, the survey does not favor their view (31.4% and 23.5% respectively). Participants may observe regular routine without sufficient procedural knowledge of phonics to ensure teaching phonic clearly, systematically and orderly.

For phonics practice (See Table 6), the score is 2.3715 ± 0.70411 , which indicates that most participants teach phonics in an unsystematic manner. Teachers' cognition of phonics affects their teaching practice, including how they select and use materials (2.7042 ± 0.98503). The survey shows that the score of "Teaching phonics explicitly with special phonics textbook (Item 10)" is the highest (3.05 ± 1.288), given that schools might not provide specialized teaching materials to students. The rest items also have high scores, revealing that only a few teachers are aware that phonics learning would be better, if combined with GPC rules or high-frequency word in passage.

Considering the teaching strategies (2.0387 ± 0.65728), the most frequent activities are "separating words into syllables (ham-bur-ger)" (Item 15, 1.77 ± 0.794) and "teaching phonics in activities like nurseries and chants" (Item 20, 1.89 ± 0.808), which are in accord with pupils' psychological characteristics and the principle of teaching phonics in fun ways (Hua, 2016b). However, participants seldom teach sound of consonants with positive transfer of L1(Chinese), provide English language input for students' listening and speaking, or assess students' phonics ability through decoding and encoding test (Cao, 2017).

TABLE 6
TEACHERS' PHONICS PRACTICE

Phonics practice	Minimum	Maximum	Mean	Std. Deviation
10.Teaching phonics explicitly with special phonics textbook	1	5	3.05	1.288
12.Teaching phonics systematically and then practice blending and decoding with high-frequency GPC or words in the textbook	1	5	2.54	1.168
13.Providing short passages with high proportion of GPC, allowing students to apply phonics rules in authentic reading materials	1	5	2.53	1.118
14. Phoneme blending and segment (v, a, n→van; van→v, a, n)	1	5	2.06	0.972
15. Separate words into syllables (ham-bur-ger)	1	5	1.77	0.794
16. Onset-rime discrimination (cat and kid; fan and van)	1	5	1.98	0.924
17. Practice rules in sentences or passages(-at, A fat cat sat on a hat.)	1	5	1.98	0.901
18. Teach sound of consonants with positive transfer of L1(Chinese)	1	5	2.25	1.004
19. Provide English language input for students' listening and speaking	1	5	2.27	0.977
20. Teach phonics in activities (nurseries and chants)	1	5	1.89	0.808
21. Assess students' phonics ability through decoding and encoding test	1	5	2.11	0.912
Phonics practice	1	4.75	2.37	0.704

3. Teaching Effect and Teaching Difficulty

Table 7 presents the unsatisfactory teaching effect with the total score of teaching effect (2.41 ± 0.755), with high score of each item. Among all the teaching difficulties (2.24 ± 0.688), "insufficient reading materials for students to use phonics rules (Item 32)" scored the lowest (1.90 ± 0.857). Thus, it is not surprising that students have difficulties reading texts with decodable words. Similarly, the rest items have no significant influence on phonics instruction. Consequently, phonics teaching lacks consistency and continuity, and teachers may teach phonics unnaturally.

TABLE 7
EFFECT AND DIFFICULTY OF PHONICS TEACHING

Effect and Teaching difficulty	Minimum	Maximum	Mean	Std. Deviation
22.Decode words with phonics rules	1	5	2.32	0.875
23.Spell words with phonics rules	1	5	2.47	0.924
24.Divide words into syllables (ba-na-na)	1	5	2.26	0.871
25.Discriminate onset-rime(fun and fur, map and cap)	1	5	2.34	0.91
26.Read decodable text	1	5	2.65	1.019
27.Assess one's own phonics ability appropriately	1	5	2.44	0.953
Teaching effect	1	5	2.41	0.755
30. Fast teaching speed	1	5	2.31	0.931
31.Mechanical drills demotivate students	1	5	2.37	1.018
32.Insufficient reading materials for students to use phonics rules	1	5	1.9	0.857
33.Less attention on blending practice	1	5	2.34	0.99
34.Teachers' unsystematic phonics knowledge and skills	1	5	2.3	1.01
Teaching difficulty	1	4	2.24	0.688

C. Variation Analysis

Independent sample T-test and ANOVA indicate that participants' workplace, ages, and teaching ages have no significant difference in their phonics teaching. However, teachers' diverse educational backgrounds have great effect on their teaching strategies and teaching effect ($P < 0.05$). Those with master degrees tend to perform better in phonics teaching (Table 8).

TABLE 8
ONE-WAY ANOVA ANALYSIS OF TEACHERS' ACADEMIC DEGREE

	Associate	Bachelor	Master	F
Teaching strategies	2.813 \pm 0.882	2.721 \pm 1.019	2.222 \pm 0.434	5.701**
Teaching effect	2.773 \pm 0.863	2.377 \pm 0.733	2.194 \pm 0.662	3.644*

* Represents $p < 0.05$, and ** represents $p < 0.01$.

The frequency of teacher training ($P < 0.05$) also influences the selection of teaching materials, phonics teaching and its effect (Table 9). Teachers who received 6~10 times of training, especially off-the-job training (1.7879 ± 0.64689 , $T = 2.162$, $P < 0.05$), perform better in phonics practice.

TABLE 9
ONE-WAY ANOVA ANALYSIS OF THE FREQUENCY OF PHONICS TRAINING

	A. 0	B. 1~5	C. 6~10	D. More than 10 times	F
Teaching effect	2.586 \pm 0.725	2.284 \pm 0.747	1.5 \pm 0.577	1.944 \pm 0.419	5.486**
Teaching material	2.844 \pm 0.941	2.627 \pm 1.001	1.500 \pm 0.577	2.000 \pm 0.577	3.543*
Practice	2.490 \pm 0.67113	2.2974 \pm 0.71651	1.5313 \pm 0.54127	1.8125 \pm 0.34422	4.074**

* Represents $p < 0.05$, and ** represents $p < 0.01$.

D. Linear Regression

There is a statistically significant correlation among teachers' perception, practice and teaching effect ($P < 0.01$, see Table 10). The positive correlation shows that the teaching effect becomes more satisfactory, as teachers better understand phonics and put it into practice. Given that not all the factors are equally significant, linear regression was conducted for further analysis.

TABLE 10
PEARSON CORRELATION MATRIX

	Phonics concept	Phonics function	Teaching material	Teaching strategy	Teaching effect
Phonics concept	1				
Phonics function	.439**	1			
Teaching material	.171*	0.106	1		
Teaching strategy	.280**	.418**	.449**	1	
Teaching effect	.292**	.271**	.522**	.604**	1

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

The linear regression reaches $R^2 = 0.463 > 0.4$, showing that the results of this operation truly reflect the impact of teachers' knowledge and phonics practice on its teaching effect. There is no multicollinearity among the six independent variables. The Variance Inflation Factor (VIF) is all less than 5, and the regression equation was significant. With $F = 29.556$, and $P < 0.001$, it means that at least one of the five independent variables significantly affects the dependent variable, teaching effect. Table 10 shows that teachers' usage of teaching materials ($\beta = 0.298 > 0$, $P < 0.05$),

and phonics teaching strategies and activities ($\beta = 0.423$, $P < 0.05$) significantly affect the teaching effect; while phonics concept ($P = 0.112 > 0.05$), phonics function ($P = 0.867 > 0.05$), and teaching difficulty ($P = 0.516 > 0.05$) do not significantly affect the teaching effect. Finally, the following regression equation is derived between variables:

$$\text{Teaching effect} = 0.390 + 0.228 * \text{teaching materials} + 0.485 * \text{teaching strategies}$$

V. DISCUSSION

A. The EFL Teachers' Overall Improvement Predicts Better Phonics Teaching Quality

EFL teaching in China has varied greatly from over a decade ago when the phonics programs were conducted in the two provinces, in aspect of numbers, scale, educational backgrounds, as reflected in the great changes of participants. Most participants entered English teaching profession at younger age after formal college education, implying that they are well-prepared with systematic knowledge of English content and pedagogies. It is noted that a small number of participants entered English teaching profession from non-English sources but with English teaching certificates. This group of teachers increase the diversity in English teaching, and face greater challenges as well in terms of pedagogical knowledge and child development theories, since they receive no teacher education at college. In regards to phonics, a specific domain, they have insufficient knowledge and strategy. Hence, to teach phonics effectively, they need more systematic knowledge and guidance.

B. Phonics Is More Perceived as a Word-Attack Skill Due to EFL Learners' Actual Needs

The participants usually use phonics to teach phonetics and word recognition via separate encoding and decoding, other than put them in meaningful reading, very different from primary schoolteachers in English-speaking countries (James, et al, 2018). Two reasons might account for this phenomenon. One is that teachers adapt this "borrowed" method in appropriate way to meet EFL learners' actual needs, namely, pronunciation and vocabulary. The other is that teachers have little systematic phonics knowledge and teaching strategies. That is, they don't have the whole picture of phonics in their mind, but some useful pieces. Therefore, they tend to favour the rules or principles that support their teaching selectively. It is good to select the content based on students' needs, but it is more vital to build up a whole picture first and then make selections, rationally and practically.

C. Appropriate Selection of Teaching Material Is Key to Effective Phonics Instruction

Phonics practice is greatly affected by the phonics content and design of different textbooks. However, phonics knowledge is deficient in most ordinary textbooks (Zhang, 2016), for example, two commonly used textbooks in the surveyed provinces. FLTPR version provides basic GPC rules and exercises, yet it is far away from sufficiency (Xie, 2012). PEP version includes a section of Let's Spell with phonetic knowledge in each unit, however, its phonics exercises are fewer and monotonous, which is not conducive to students' interest in learning phonics (Chen, 2018).

Given that most primary teachers are accustomed of "teaching the textbook", it is not easy for them to integrate additional phonics knowledge into textbooks. Consequently, they teach phonics randomly and implicitly without specific plans. Though they make great efforts to teach high-frequency GPC within limited class periods, they are less capable in designing authentic and meaningful reading activities. Their improper and mechanical drills may demotivate students from learning phonics. As teachers provide less reading materials, it is not surprising that students have difficulties reading texts with decodable words. Thus, it is necessary to advocate teachers or local institution to design teaching materials with systematic phonics knowledge.

D. Optimal Teaching Strategies Will Improve the Effect of Teaching

The results demonstrate that appropriate teaching strategies will greatly influence the teaching effect, among which, using English as teaching language is quite important. However, some teachers are unable to make it due to improper teacher talk. Before they entered the profession, they have learned complex language as advanced learners at college. So, when they teach beginning learners, they need to adapt their language input to suit learners' needs, allowing learners more opportunities to listen and distinguish, spell and write phonemes, and practice more to improve their spelling ability.

Thus, teachers need to optimize their strategies to improve teaching effect. For example, they can integrate phonics into such interesting activities as chanting and singing, since they are more in line with pupils' characteristics of learning for fun. Also, it is suggested that student use Chinese Pinyin to memory English words and learn sounds of consonants, transferring their L1 learning ability to L2 phonics rules through comparison (Shang, 2015).

E. Appropriate Phonics Training Is the Key to Successful Phonics Teaching

The result shown in Table 10 seems to break the stereotype (DeMonte, 2013) that teacher training is an effective way to improve teaching. Several reasons may account for this result.

Firstly, previous phonics training program might not meet teachers' demands. With unclear purpose, duplicate content, and insufficient guidance, teachers might flog a dead horse, failing to build up systematic phonics (Ehri & Flugman, 2018). Secondly, developing and integrating new strategies into daily teaching, often referred to as deliberate practice (Hambrick, et al., 2014), require considerable time to become routine. Besides, the integration of new strategies

might result in deterioration of performance until higher levels of competence are reached (Breckwoldt, et al., 2014). As a consequence, the training may lead to detrimental effects during an intermediate time (Britten, 1988), and teachers may have no idea how to rectify their instruction. Thirdly, unlike English-speaking countries where there are “phonics screening” to evaluate learners’ outcomes, there’s no such guideline for EFL teachers in China to assess students. Finally, the upgrade of teaching concepts may cause teachers’ impatience or job burnout sense (CERA, 2021), as it is less challenging to imitate how to be a teacher based on their learning experience (Beauchamp & Thomas, 2011).

Therefore, to popularize phonics, joint-efforts should be made toward effective training that combines phonics theory and practice (Xu, 2014), thus directing schools on how to teach word reading (Flynn, et al., 2020). For instance, guide teachers to make micro-courses about phonics teaching or use online phonics games to motivate students (Hou, 2019). In addition, higher institutions are suggested to set up a phonics course to provide pre-service EFL teachers with systematic phonics knowledge.

VI. CONCLUSION

In sum, this study reveals that appropriate use of teaching material and teaching strategy would predict good teaching effect. To achieve this goal, Chinese EFL teachers need professional support from well-designed training programs. The scale in the study shows high reliability and validity, yet its construction validity was tested only once and needs further testing. Further study would combine data from class observation and teacher interview, to explore how teachers apply phonics knowledge and strategy for better teaching effect.

ACKNOWLEDGEMENTS

This research was supported by Post-funded Project of Guangdong University of Foreign Studies (19HQ22), Schoolteachers’ Research Ability Enhancement of Guangdong Education Science Planning Project (2021YQJK092), and Innovation Project of Guangdong Graduate Education (2021JGXM048). We’re deeply grateful for the intellectual input provided by our colleagues, Dr. Lijuan Liang and Dr. Jinhua Zhou, from the perspective of psycholinguistics and scale development. Our thanks also go to Mr. Tao Qi and Miss Yiqin Xiang from Shannxi province, Miss Hua Wan, Miss Yonghong Wu, Miss Yuling Zhou, Miss Zhiheng Zhang, and Mr. Duosheng Li from Ningxia Hui Autonomous Region, who work as phonics teachers or local teaching specialists, for their valuable support in the data collection.

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