Sino-US English Teaching, October 2024, Vol. 21, No.10, 449-455
doi:10.17265/1539-8072/2024.10.001

Influence of Chinese Pinyin on Phonics Instruction in Primary School English Classrooms

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Phonics is designed to develop students' skills in decoding written words and spelling words they hear by creating connections between letters and their corresponding sounds. The structure and pronunciation of certain elements in Chinese Pinyin bear resemblance to those of specific letters and letter combinations in English. Consequently, it is hypothesized that for young learners of English in China, their familiarity with Chinese Pinyin could potentially enhance their learning of English as a second language (ESL), and educators might utilize Pinyin in teaching phonics. This study aimed to explore the extent and manner in which Pinyin influences phonics. By examining the performance of young learners in phonics acquisition, the study revealed that Chinese Pinyin has a significant impact on phonics, which is more intricate than initially anticipated. Positive transfer is observed when the Pinyin initials correspond to English consonants in both form and sound. Conversely, negative transfer occurs with most vowels, which differ significantly from the final sounds in pronunciation. These findings offer valuable insights for phonics instruction, potentially aiding in the improvement of pronunciation and vocabulary acquisition.

Keywords: Chinese Pinyin, phonics, positive transfer, negative transfer

Introduction and Background

Phonics originated from reading instruction in the U.S.A. in the 1890s, but it was not widely adopted in phonetic and reading teaching in English-speaking countries until the late 1990s. It was primarily used for learning letters, spelling words, and reading texts. From the late 1960s to the 1970s, phonics was further developed. In the late 1990s, phonics instruction became widely used in English classes across various states in the U.S.A., and its importance in education has been continually recognized and reaffirmed.

Heilman (1985, p. 13) suggested that natural spelling is not merely a method of teaching reading but an essential part of guiding learners' reading processes. Durkin (1993, p. 6) further emphasized that natural spelling establishes a connection between letters and sounds, aiding readers in recognizing the pronunciation of unfamiliar words. Today, phonics remains a popular method of English learning in English-speaking countries.

Chinese Pinyin is a unique tool for assisting children with the pronunciation of Chinese characters. In China, phonics is favored by teachers who teach English to young children. For primary school English beginners in China, the simultaneous use of these two methods might significantly influence each other. This study is concerned with the impact of Chinese Pinyin on phonics instruction.

Scholars have varying interpretations of phonics. Blevins (2017, p. xviii) believed that quality phonics instruction can be described as active, engaging, and thought-provoking. Gao (2005) posited that the purpose of

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phonics is to enable students to master letters and letter combinations that represent the basic sounds of English, as well as some fundamental rules of the relationship between English pronunciation and spelling, allowing students to pronounce an English word upon seeing it. Hsu (2000, p. 21), in her study, points out that phonics is knowledge about the relationships between pronunciation and letters and is an effective tool for improving spelling. The study of phonics has undergone a long and challenging process abroad and has ultimately become one of the most popular English teaching methods globally. It has been proven that phonics is highly effective, laying a solid foundation for students' English pronunciation.

In China, phonics was first introduced to Taiwan and Hong Kong in 2000 and is now widely used in primary schools in Mainland China, particularly in the southeastern region. Zhang (2003) was among the first to promote phonics in mainland China. Soon after, Chinese scholars began to introduce phonics and conduct relevant studies on its instruction. For instance, Huang (2009) discussed the phenomenon of transfer from Chinese Pinyin to phonics, which has spurred the development of research on English spelling ability. Notably, most of these studies have focused on the application and practice of phonics in teaching, with only a few touching upon the influence of Chinese Pinyin on phonics. Primary school students are at a stage where they are learning both Chinese Pinyin and phonics. Since Pinyin is similar to the Latin alphabet in writing and pronunciation, it is necessary to investigate whether and how Chinese Pinyin affects phonics instruction.

Research Procedure

While there is much debate about the emphasis on systematic synthetic phonics (Carter, 2019), this was not the focus of this study. Instead, this study aimed to investigate the impact of Chinese Pinyin on phonics instruction in China's primary schools. Through the exploration of this topic, the study intended to gain a deeper understanding of the relationship between Pinyin and phonics and to investigate whether and how Chinese young learners of English transfer knowledge of Chinese Pinyin to phonics. Therefore, the following questions will be addressed in this study:

1. Does Chinese Pinyin influence phonics instruction? If so, how does it affect it?

2. Do young learners of English in China transfer Chinese Pinyin to phonics? If so, what are the characteristics of this transfer?

3. What implications does this study have for English teaching in primary schools in China?

In this study, 108 third-grade students from a primary school in East Guangdong Province were selected as subjects. They had just begun learning English after having learned Chinese Pinyin for at least two years. Thus, the influence of Chinese Pinyin on these third-grade English beginners could be clearly observed.

The author first conducted a questionnaire survey designed to elicit the young learners' understanding and attitudes towards phonics. All 108 valid questionnaires were collected. These questionnaires were then sorted and summarized according to the nature of the questions and the responses, followed by a comprehensive comparative analysis of the statistical data.

In addition, the subjects were observed during their phonics lessons. After they completed their phonics learning, at the end of the first semester of the third academic year, they were given a pronunciation test. They were asked to pronounce some English words listed in the left column of Table 1 to determine whether their pronunciation was influenced by Chinese Pinyin, as indicated in the right column. The data were then collated and analyzed.

Table 1

Pronunciation Test

English letters and sounds			Chinese Pinyin		
Letters	Samples of English words		Initials and finals	Samples of Chinese words	
A a	Ant	Apple	a	哈	发
B b	Bag	Book	b	被	八
C c	Crayon	Cat	c	才	灿
D d	Dog	Duck	d	对	点
E e	Elephant	Egg	e	鹅	二
F f	Foot	Face	f	分	芳
G g	Green	Gift	g	个	高
H h	Hand	Hi	h	好	会
I i	Ice	Ice-cream	i	皮	西
J j	Jeep	Jump	j	讲	及
K k	Kite	Kate	k	看	课
L l	Leg	Long	l	李	六
M m	Mom	Mike	m	梅	买
N n	Noodles	Nose	n	年	那
O o	On	Orange	o	偶	哦
P p	Pig	Pen	p	怕	平
Q q	Queen	Quiet	q	且	前
R r	Rice	Red	r	如	热
S s	Six	Sarah	s	四	三
T t	Ten	Tiger	t	题	涛
U u	Umbrella	Under	u	屋	富
V v	Vet	Vest			
W w	Water	Wet	w	尾	玩
X x	Box	Fox	x	细	喜
Y y	Yo-Yo	Yellow	y	有	应
Z z	Zip	Zoom	z	中	紫

Results and Discussion

Among the 108 students surveyed, 98 students admitted that they were influenced by Chinese Pinyin while learning phonics, seven students claimed they were not influenced by Chinese Pinyin, and three students' opinions were unclear. Thus, it can be seen from the questionnaire that the majority of the students believed they were affected by Pinyin when learning phonics. Chinese is their mother tongue, and they learned Chinese Pinyin much earlier than English phonetics. Therefore, by the end of their first year of primary school, the Chinese phonetic system had already been established in the learners' minds. Consequently, it can be assumed that the phonetic knowledge and skills developed during the learning of Chinese have a significant impact on English learning.

Transfer of Chinese Phonetic Initials to English Consonants

In the first semester of the third grade, the subjects were required to master 18 consonants: [b], [p], [m], [w], [f], [v], [l], [t], [d], [n], [r], [s], [z], [dʒ], [j], [k], [g], and [h]. There are 23 initial sounds in Chinese Pinyin (they

are: b, p, m, f, d, t, n, l, g, k, h, j, q, x, zh, ch, sh, r, z, c, s, y, and w), and 18 consonant phonemes in phonics. Pinyin letters can be categorized into seven classes based on pronunciation positions, which are similar to the classification of consonants in phonics. Among Chinese Pinyin letters, 20 letters resemble the written forms of English letters, and 13 letters resemble the pronunciation of English consonants. Table 2 presents a comparison of Chinese phonetic initials and English consonant phonemes based on their articulation places.

Table 2

Comparison of Chinese Phonetic Initials (Lv, 2012, p. 9) and English Consonant Phonemes by Articulation Places

Types of pronunciation	Initials of Chinese Pinyin	English consonants
Bilabial	b, p, m	/b/, /p/, /m/, /w/
Labiodental	f	/f/, /v/
Dental	z, c, s	
Blade-alveolar	d, t, n, l	
Blade-palatal	zh, ch, sh, r	
Lingual palatal	j, q, x	/j/
Velar	g, k, h	
Linguo-dental		/l/
Alveolous dental		/t/, /d/, /n/, /r/, /s/, /z/, /dʒ/
Linguales posteriores		/g/, /k/
Glottis		/h/

Pupils must learn 18 consonants in phonics and 23 initial sounds in Chinese Pinyin during the first semester of Grade 3. According to the comparison of Chinese Pinyin and English consonants in Table 2, it is evident that the initial sounds of Chinese Pinyin can be categorized into seven classes, as can the English consonants. There are three types of pronunciation that are identical in both Pinyin and English: bilabial, labiodental, and lingua-palatal phonemes. There are also similarities in other categories, suggesting that the pronunciation of Chinese phonetic initials is roughly similar to that of most English consonants. Here are some specific examples: The three initials *b*, *p*, and *m* in Chinese Pinyin and the three consonants */b/*, */p/*, and /m/ in English are all sounds formed by the lips being pressed together to allow the air to flow out of the mouth (Bao, 1988, pp. 26-29). The initial *f* in Chinese Pinyin and the two consonants */f/* and /v/ in English are pronounced with the upper lip against the lower teeth, allowing the air to flow through the gap between the upper and lower lips. The mouth shape and the tongue position for the initials *d*, *t*, *n*, *l* in Chinese Pinyin and the English consonants /*d*/, /*t*/, /*n*/, and /l/ are similar. The pronunciation of initials *z* and *s* and the consonants /z/ and /s/ involves the tongue being close to the alveolar ridge, allowing the air to flow through the tip of the tongue and the alveolar ridge (Bao, 1988, pp. 60-64). These examples further indicate that the pronunciation of Chinese Pinyin initials is similar to that of most English consonants.

Pinyin's writing system is similar to the English alphabet, which can easily lead to nonstandard writing among English beginners. The results of the questionnaire show that most pupils agree that there are many similarities between the initials of Chinese Pinyin and English consonants, and most Pinyin initials may facilitate the learning of phonics. The test results depicted in Figure 1 demonstrate that the number of subjects who pronounce *t*, *d*, *k*, and *h* correctly is higher, at over 80%. In contrast, the number of subjects who produce correct pronunciations of *f*, *j*, *q*, *x*, *r*, and *y* is lower than 70%. It can be seen that the data largely confirm the assumption

that the accuracy rate of pronunciation for English consonants that sound like Pinyin initials is higher. Therefore, most of the Chinese Pinyin initials play a positive role in pupils' acquisition of consonants in phonics, while only some initials have a negative impact.

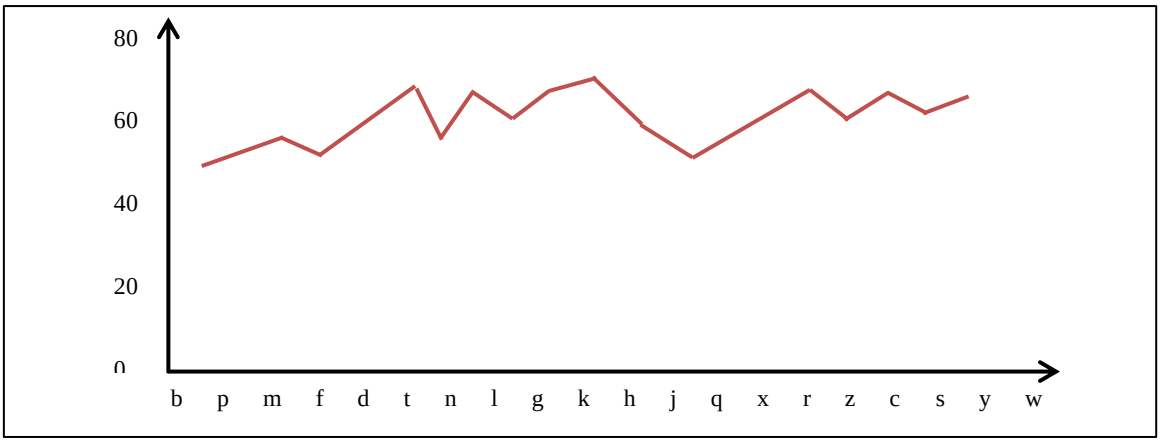

Figure 1. Number of correct pronunciations.

Transfer of Chinese Phonetic Finals to English Vowels

In the first semester of the third grade, students are required to master four English vowels. Chinese Pinyin includes 24 finals, five of which have similar written forms to English vowels, one of which has a similar pronunciation to an English vowel, and four of which do not have corresponding similar sounds in Chinese Pinyin.

Table 3

Comparison of Written Letters and Pronunciation

Chinese Pinyin	a	e	i	o	u
English letters	A a	E e	I i	O o	U u
Phonics	a [æ]	e [e]	i [aɪ]	o [ɒ]	u [ʌ]

In the first semester of Grade 3, students are required to learn five vowels in phonics and 24 finals in Chinese Pinyin. As shown in Table 3, only the vowel "o" is similar in pronunciation to one of the finals in Pinyin, while "a", "o", "e", "i", and "u" have similar written forms. This indicates that there is limited similarity between the five English vowels and the finals of Pinyin in terms of pronunciation. According to the transfer hypothesis, positive transfer is likely to occur when there is similarity between the content of the two languages. Conversely, negative transfer is likely to occur when there is dissimilarity. Therefore, students who have mastered the finals of Chinese Pinyin may experience negative influence on their learning of English vowels due to this dissimilarity. The fact that only one final in Pinyin is similar to an English vowel suggests that only this one final plays a positive role in the transfer of pronunciation.

The questionnaire responses indicate that only one subject, accounting for 0.9% of the total, agreed that the finals of Chinese Pinyin can promote the learning of English vowels. On the other hand, 105 subjects, accounting for 97.2%, claimed that the finals can hinder the learning of vowels. The test results depicted in Figure 2 further support this, showing that the number of students who correctly pronounced "o" was higher, at around 80%, while the number of students who correctly pronounced "a", "e", "i", and "u" was lower than 60%. This significant gap clearly demonstrates that most finals of Chinese Pinyin play a negative role in the learning of English vowels for beginners in phonics.

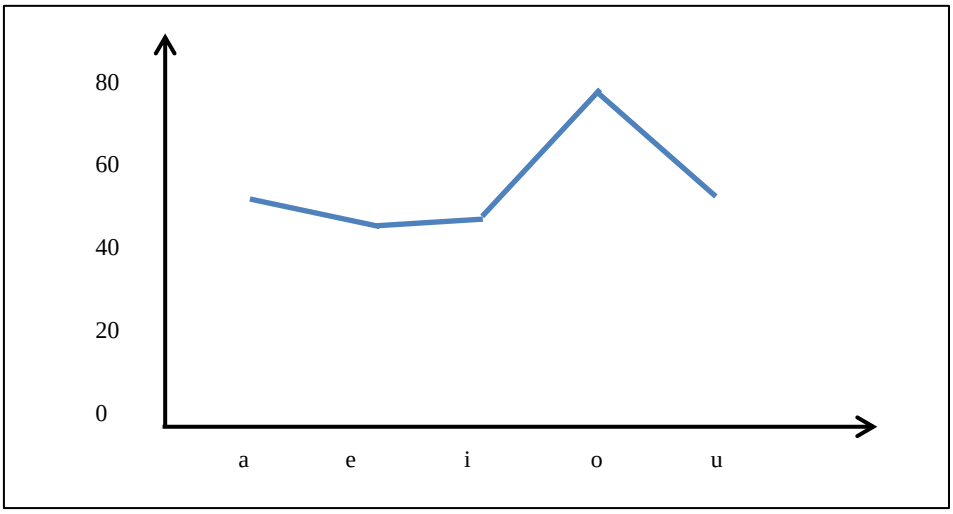

Figure 2. Number of correct pronunciations.

Implications for Teaching

Based on the aforementioned findings, we propose several suggestions to enhance the use of phonics:

First, leverage similar pronunciations. We can capitalize on students' familiarity with Chinese Pinyin to foster positive transfer to phonics learning and reduce the complexity of phonetic learning. In teaching, we might use the pronunciation of the initial "t" to introduce the consonant /t/. When students recognize these similarities, teachers should provide guidance to ensure that the positive transfer of Pinyin fully contributes to learning. Lastly, teachers should summarize and teach students how to use Pinyin to master the pronunciation of English consonants in simple words.

Second, maximize the use of similar features between initials and consonants. It is more effective to use the visual similarity of initials and consonants to establish a direct association in learners' minds and guide them to remember pronunciation by appearance. Teachers should instruct students to remove the "o" or "e" from initials. This method can help students easily master the 18 consonants. Teachers should first lead students to compare the similar shapes of Chinese phonetic initials and English consonant phonemes, allowing students to perceive that initials and consonants share characteristics, thus committing the pronunciation of consonants to memory quickly.

Third, make the best use of spelling. Phonics shares similarities in spelling with Chinese Pinyin. Once, students have mastered Chinese Pinyin, they can easily learn phonics. For instance, when teaching the word "dog", the teacher can use the spelling method of Chinese Pinyin to guide students in practice, allowing them to learn and experience phonics effectively.

Fourth, avoid negative transfer. Teachers should provide detailed and clear explanations, so that students can understand quickly. Additionally, teachers' demonstrations should be precise and concise, with attention to the unique psychological characteristics of primary school students, who are in an active learning phase. Therefore, when teaching, it is crucial to make the tongue position and mouth shape concrete and visual, using all available means to stimulate students' curiosity and interest, and to reinforce the memory of mouth shapes and tongue positions. Teachers can stimulate interest, guide, and enable students to discover differences themselves. In this way, the differences identified by students not only enhance their memory of pronunciation positions, but also provide them with a learning method.

Conclusion

In this study, we investigated the influence of Chinese Pinyin on the learning of phonics among third graders. It was found that Chinese Pinyin exerts an influence on some vowels and consonants in phonics, either positively or negatively. The specific conclusions are as follows:

1. The transfer from Chinese Pinyin to phonics is inevitable.

2. Positive transfer of Chinese Pinyin to phonics mainly occurs in the acquisition of English consonant phonemes, but not as frequently in the acquisition of English vowel phonemes.

3. Negative transfer of Chinese Pinyin to phonics primarily occurs when learners are acquiring English vowel phonemes, but rarely in the acquisition of consonant phonemes.

These results have valuable implications for phonics instruction. Teachers should leverage the positive transfer of Chinese Pinyin to enhance the effectiveness of phonics teaching and mitigate negative transfer.

However, the study has some limitations. For instance, the research period was relatively short, and the number of subjects was relatively small, consisting of only two third-grade classes. Additionally, the research sample in this study was based on 108 students from a primary school in East Guangdong Province. The collected samples are relatively limited, and pronunciation may also vary due to the influence of local dialects.

Meanwhile, a variety of strategies and methods can be employed in teaching to maximize the positive transfer of Pinyin and minimize its negative transfer. Future research should investigate the influence of Pinyin on phonics for learners of different ages to provide a comprehensive understanding of Pinyin's impact on phonetic acquisition.

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