

# The Relationship between English Phonological Awareness and Early Reading Performance among Chinese Preschoolers in Yunnan Province, China

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**Abstract:** *This study aims to discover whether there is a significant correlation between English phonological awareness and early reading performance among Chinese preschoolers, and to uncover which elements among phonological awareness are significant and which are not. This research was conducted in a government kindergarten school in Dali, China. The samples were 24 third year kindergarten preschoolers who individually responded to a three-part test. The Pearson Correlation Coefficient and simple linear regression analyses were used to analyze the results. It was found that English phonological awareness had a strong positive correlation with early reading performance. In particular, English syllable awareness showed a moderate positive correlation with English early reading performance. English phoneme awareness had a high positive correlation with English early reading performance. However, onset-rhyme awareness had a low correlation with English early reading performance, which means it is not a significant element in predicting the level of English early reading performance. The results of this study suggest the importance of phonological awareness for early reading ability development and the assessment of children's early reading performance could direct attention to the lack of phoneme awareness training or practice of the learners.*

**Keywords:** English phonological awareness, early reading performance, Chinese preschooler

## Introduction

Following the continuous acceleration of the globalizing economy and the multiplying international contacts, the world has become a “global village” (Cheng, 2002). In this village, English is increasingly perceived and utilized as a lingua franca, an essential communication tool, and in turn has become one of the basic conditions for self-development in order to survive as modern global citizens.

There is a popular belief that children as second language learners are “superior” to adults, that is, the younger the learner, the quicker the learning process and the better the outcomes (Scovel, 2000). As this common belief gains followers, the practice of beginning to learn a foreign language in primary or even pre-primary education is a rapidly expanding activity all over the world (Asia Society, 2009).

China has become an important part of the world market due to the uninterrupted opening to the outside world and rapid economic development. In order to play a greater and more active role in international affairs, there is a strong demand for China to develop fluent English competency among its citizens. In 2001, anticipating the necessity of English proficiency among its citizens to compete globally, the Chinese Ministry of Education required that English be taught in Chinese public schools beginning in Grade 3, with the option of initiating English instruction as early as Grade 1 (Ministry of Education of the People's Republic of China, 2001). In big cities, English can start as early as kindergarten where children learn through songs, games and toys. Presently, in order to get the most benefit from teaching English to Chinese kindergarten students, insight of how to best introduce English as a foreign language to these young learners seems desirable.

### **Statement of the Problem**

In China, many students are good at reading and grammar, but when it comes to actually speaking, they freeze up (John, 2006). This is because English and Chinese belong to two different language families and have many significant differences in their sound systems which can make learning spoken English extremely difficult for Chinese speakers (Paul, 2011). Just like the problem of pronunciation, a particular English sound which does not exist in Chinese language can therefore pose a difficulty for Chinese learners to produce. These sounds include both vowels and consonants. Research shows that in learning English, Chinese learners are often interfered with by their native language, especially at the level of phonology (Deng & Gao, 2009).

The relationship between learners' English phonological awareness and reading literacy is more complex when considering that learners are learning English as a foreign language but not their mother tongue. Many studies (McBride-Chang & Kail, 2002; Hu, 2003; Lafrance & Gottardo, 2005; Shu et al., 2008) have demonstrated a close relationship between English phonological awareness and reading proficiency among alphabetic language speakers like Spanish. However, there are fewer and less clear relationships from a non-alphabetic EFL (Muter & Diethelm, 2001). In addition, most studies explored young English native readers' phonological awareness, and most research models were across the kindergarten stage (Wu, 2010). Very few specialized studies of kindergarten children were invested in the field of phonological awareness, and early reading performance in a second language learning context, and China is no exception. In order to fill in the gap, the researcher decided to investigate the relationship between English phonological awareness and early reading performance among Chinese preschoolers.

### **Research Objectives**

This study aims to find out whether there is a significant correlation between English phonological awareness and early reading performance among Chinese preschoolers, and to see which elements among phonological awareness are significant and which ones are not.

### **Research Questions**

This research study attempts to answer the following questions:

1. Is there a significant relationship between phonological awareness and early reading performance in learning English as a foreign language among Chinese preschoolers?

2. Which elements of phonological awareness are significantly related to early reading performance in English as a foreign language among Chinese preschoolers?

Which elements of phonological awareness are not significantly related to early reading performance in English as a foreign language among Chinese preschoolers?

### **Definition of the Terms**

1. Phonological awareness – refers to an individual’s awareness of the phonological structure, or sound structure, of words. Phonological awareness involves the detection and manipulation of sounds at three levels of sound structure: syllables, onsets and rhymes, and phonemes. In this study, the phonological awareness test is divided into English syllable task, English alliteration task, English rhyming task and English phoneme task.

2. Chinese preschoolers – children from the ages of 3 to 6 are considered preschoolers. They are the ones who are old enough to talk and walk but still too young to start formal schooling. In this study, Chinese preschoolers refer to third year kindergarten preschoolers with an average age of 6 years old at Dali Kindergarten, Dali, China.

3. Early reading performance – refers to a preschooler’s performance on reacting to comprehending and learning from written language. In this study, early reading performance refers to early literacy performance in reading. The early reading performance test is divided into three parts: English word recognition, English nonsense word and English reading comprehension.

### **Literature Review**

#### **1) English Phonological Awareness**

Phonological awareness is an aural and oral skill. Phonological awareness is the area of oral language that relates to the ability to think about the sounds in a word (the word’s phonological structure) rather than just the meaning of the word. From the Education Review Office of New Zealand (2011, p. 3), “phonological awareness refers to an individual’s awareness of the sound structure, or phonological structure, of a spoken word including syllables, onsets and rhymes, and phonemes.” Consequently, in the current study, the researcher follows the categorization of three components in English phonological awareness as syllable awareness, onset-rhyme awareness, and phoneme awareness.

#### **2) Early Literacy in Reading**

Early literacy is the stage of written language acquisition, whereby, young students attain the foundational principles of reading and writing (Aarnoutse et al., 2005). In other words, early literacy is what children know about reading and writing before they actually learn to read and write. To clarify, early literacy is not the teaching of reading. It is building a foundation for reading so that when children are taught to read, they are ready (Ghoting & Martin-Díaz, 2006).

How to measure whether reading ability is developed is another area of interest. As Cooper (2000) wrote, how well students recognize known words can affect how fluently a student reads, and fluency is a building block of comprehension. First, to read familiar words will test their reading performance in word recognition. Second, nonsense words can be a fun format for children to apply the skills they have to unknown words. Stanovich (2000) conducted a comprehensive review of the cause and effect relationship of children’s overall reading ability, and their ability to decode nonsense words. He concluded that the ability to fluently decode nonsense words is discovered to be a “potent predictor of reading ability

at all levels” (Stanovich, 2000, p. 100). Third, the best task to test reading performance is reading comprehension itself. Reading comprehension depends on language abilities that have been developing since birth. Basic vocabulary and grammar are clearly essential to comprehension because each enables understanding of words and their interrelationships in and across individual sentences in a text (Kintsch & Kintsch, 2005). Thus, in order to understand how well young learners have developed their early literacy in reading, their performance in word recognition, nonsense words and reading comprehension can be used as indicators.

### 3) Phonological Awareness and Its Association with Reading

Phonological awareness is an early indicator of reading ability in English-speaking children. This strong association has been reported in a large body of research (Berninger, 2001). In other words, excellent reading proficiency lies in the development of phonology (Lundberg, 2002). As children are becoming emergent readers, phonological awareness is a foundational skill that significantly impacts reading development.

The different linguistic units of phonological awareness as syllable awareness, onset-rhyme awareness, and phoneme awareness have their respective impacts on reading. The syllable is a fundamental linguistic unit, and syllables play an important role in the development of reading. Goswami (2002) suggested that the linguistic units, onset and rhyme, may be crucial in explaining the robust link between rhyming and reading. He also claimed that phoneme awareness has a strong association with reading which means that poor readers are deficit in phoneme awareness compared to normal readers of the same age and even to young children who match them in reading level (Goswami, 2002).

### Research Design

The conceptual framework of analysis on the relationship between English phonological awareness and early reading performance is shown in Figure 1.

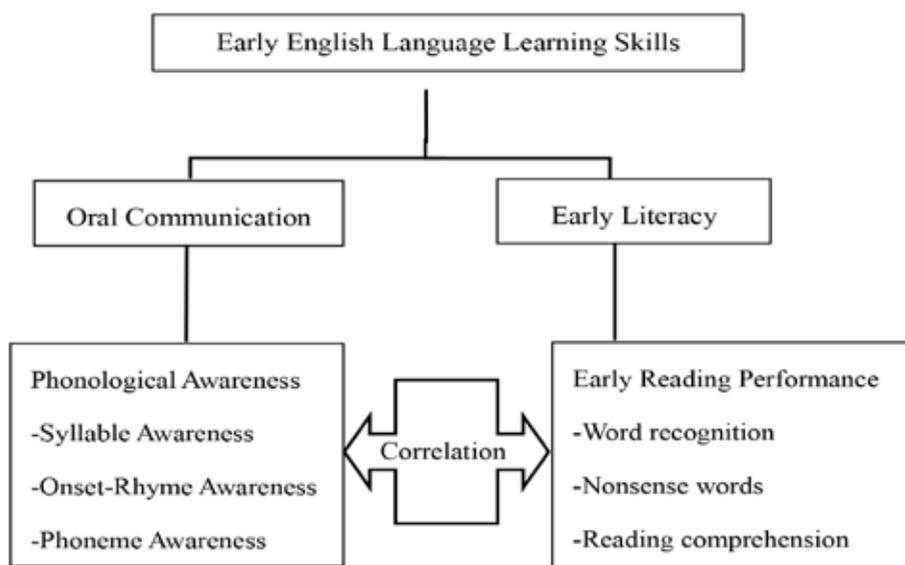


Figure 1 Conceptual Framework

Developed from the Education Review Office of New Zealand (2011), Cooper (2000), Stanovich (2000) and Kintsch & Kintsch (2005).

## Population and Samples

The population of this study was 120 third year kindergarten preschoolers with an average age of 6 years old at Dali Kindergarten, Dali, China. When the research started, all students had been studying English for at least two and half years using the same teaching materials for English learning activities with the same teachers. A systematic sampling was used to identify the samples of this study. Using the name list of each class, every fifth student was selected. Therefore, out of this population, approximately 24 children were the samples.

## Research Instruments

The Test of Phonological Awareness and Early Reading Performance was used as the main instrument of this research. The purpose of the phonological awareness tasks was to investigate a young learner's ability to analyze sounds and the sound structure of words. The purpose of the early reading performance tasks was to investigate an individual's ability to comprehend and learn from written language. The format of the test is an imitation of the Dynamic Indicators of Basic Early Literacy Skills 6th Edition (Good & Kaminski, 2007). The content of the test was from the English teaching materials used at Dali Kindergarten.

## Data Collection

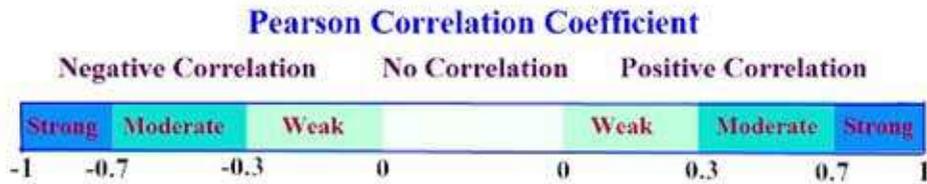
The test was conducted with 24 kindergarten preschoolers by their English teacher from June 29 to July 6, 2015 with four students each day. First, the purposes of the study were explained orally to the whole group at one time in Chinese. After that, the samples were called into a room for assessment one by one. Prior to working on the phonological awareness tasks and the early reading performance tasks, the task instructions on how to complete each of them were explained orally to the individual subject in Chinese. During the total period of data collection, the researcher was present observing how the test was conducted.

## Data Analysis

After the testing was completed, and all the data was collected, the Pearson Correlation Coefficient was used to determine the correlations between different linguistic levels of phonological awareness and early reading performance. Simple Linear Regression Analyses were used to find out which ones among the different areas of English phonological awareness show predictive intercorrelations with early reading performance.

## Research Findings

The Pearson Correlation Coefficient is a statistical measure of the strength of a linear relationship between paired data. In a sample, it is denoted by  $r$  and is by design constrained as follows:



**Figure 2** Pearson Correlation Coefficient  
 Source: Bryman & Cramer, 2011.

**Research question one:** *“Is there a significant relationship between English phonological awareness and early reading performance in learning English as a foreign language among Chinese preschoolers?”*

**Table 2** Correlations between Phonological Awareness and Early Reading Performance

		Correlations	
		Phonological Awareness (PA)	Early Reading Performance (ERP)
PA	Pearson correlation	1	.753** ( <i>r</i> )
	Sig. (2-tailed)	-	.000
	N	24	24
ERP	Pearson correlation	.753**	1
	Sig. (2-tailed)	.000 ( <i>p</i> )	-
	N	24	24

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

The Pearson Correlation Coefficient analyses (Table 2) show that the value of *r* is 0.753 (*p* < .001). Referring to Figure 2, this indicates a strong positive correlation, which means that the higher the English phonological awareness scores, the higher the scores of early reading performance (and vice versa). Thus, the relationship between English phonological awareness and early reading performance in learning English as a foreign language among Chinese preschoolers is significant.

**Research question two:** *“Which elements of phonological awareness are significantly related to early reading performance in English as a foreign language among Chinese preschoolers?”*

Three simple linear regression analyses were separately performed among the dependent variable (early reading performance) and the three predictors or independent variables (syllable awareness, onset-rhyme awareness and phoneme awareness). The results are displayed below in Table 3.

**Table 3** Simple Linear Regression Analyses with Early Reading Performance as the Dependent Variable and Different Levels of English Phonological Awareness as the Predictors

Model	Adjusted		F Change			
	R	R-Squared	R-Square	Std. Error		Sig.(p)
1	.560	.314	.282	2.192	10.049	.004
2	.337	.114	.073	2.490	2.824	.107
3	.733	.537	.516	1.800	25.557	.000

Model 1. Predict Variable: (Constant), syllable → early reading performance

Model 2. Predict Variable: (Constant), onset-rhyme → early reading performance

Model 3. Predict Variable: (Constant), phoneme → early reading performance

Table 3 provides the values of each independent variable among English phonological awareness. In Model 1, the *R* value (the “*R*” Column) representing the Pearson Correlation Coefficient of English early reading performance and syllable awareness is 0.56, which indicates a moderate degree of correlation (refer to Figure 2). In Model 2, the *R* value representing the Pearson Correlation Coefficient of English early reading performance and onset-rhyme awareness is 0.337, which indicates a low degree of correlation (refer to Figure 2). In Model 3, the *R* value representing the Pearson Correlation Coefficient of English early reading performance and phoneme awareness is 0.733, which indicates a high degree of correlation (refer to Figure 2). The *R*<sup>2</sup> value (the “*R* Square” column), described as the coefficient of determination, indicates how much of the total variation in the dependent variable (English early reading performance) can be explained by each of the independent variables (syllable awareness, onset-rhyme awareness and phoneme awareness). The independent variables appear to be very significant for making predictions since the value of *R*<sup>2</sup> is close to 1. In Model 1, the *R*<sup>2</sup> value of 0.314 means that 31.4% of the total variation in English early reading performance can be explained by syllable awareness, which is not very large. In Model 2, the *R*<sup>2</sup> value of 0.114 means that 11.4% of the total variation in English early reading performance can be explained by onset-rhyme awareness, which is small. In Model 3, the *R*<sup>2</sup> value of 0.537 means that 53.7% of the total variation in English early reading performance can be explained by phoneme awareness, which is relatively large.

Second, Table 3 also shows the *p*-value (the “sig.” in Column, “sig.” for “*significance*”) of the independent variable’s effect on the dependent variable. *P*-values less than .05 are generally considered “statistically significant”. In this case, phoneme awareness and syllable awareness are at the  $P < 0.05$  level of significance, hence, phoneme awareness and syllable awareness are significant as predictors of English early reading performance.

As a consequence, from the analysis above, English phoneme awareness has a high degree of correlation with English early reading performance; however, syllable awareness has a moderate degree of correlation with English early reading performance. Most of the variations of English early reading performance can be explained by phoneme awareness, but syllable awareness and onset-rhyme awareness cannot. Thus, it can be concluded that phoneme awareness is a significant element of phonological awareness related to early reading performance, and can significantly predict the level of English early reading performance.

**Research question three: “Which elements of English phonological awareness are not significantly related to early reading performance in English as a foreign language among Chinese preschoolers?”**

The results of Table 3 show that onset-rhyme awareness ( $R = 0.337$ ) has a low correlation with English early reading performance. Moreover, the  $p$ -value of onset-rhyme awareness ( $p = 0.107$ ) is not at the  $P < 0.05$  level of significance, which means that onset-rhyme awareness can't significantly predict English early reading performance. Therefore, it can be concluded that English onset-rhyme awareness is not significantly related to early reading performance in English as a foreign language among Chinese preschoolers.

## Discussion

As a result of Research Question One, this research found a strong relationship between phonological awareness and early reading performance in learning English as a foreign language among Chinese preschoolers. Similarly, previous studies (Lonigan, et al., 2000; Catts et al., 2001; Lyon et al., 2003) also provided similar findings: phonological awareness was shown to be a primary factor underlying early reading achievement.

Second, from the results of Research Question Two, syllable awareness and phoneme awareness have positive significant correlations with English early reading performance. Moreover, English phoneme awareness is a significant predictor of the level of English early reading performance. This is similar to what Gillon (2004) learned, that phoneme awareness performance was a strong predictor of long-term reading success and could predict literacy performance. English phoneme awareness not only was the most important and sophisticated level of phonological awareness, but also provided a link between oral communication and reading for young learners to better understand how language is used in oral and written forms. Therefore, this finding is important due to the significance of English phoneme awareness to the impact it has on reading abilities in the present and future learning of any young individual.

Third, according to the simple linear regression analyses, the researcher noted that onset-rhyme awareness had a low correlation with English early reading performance. Moreover, English onset-rhyme awareness is not a significant predictor of the level of Chinese preschoolers' English early reading performance. It seems that the role of onset-rhyme awareness is not as important as syllable awareness and phoneme awareness. The same finding was also found in the research done by Hulme et al. (2002), however, their research investigated native English speaking children. Thus, it can be concluded that Chinese preschoolers might have the same characteristic in the level of onset-rhyme awareness as native English speaking children.

## Recommendations for Further Study

This study only analyzed the relationship between the components of English phonological awareness and Chinese preschoolers' English early reading performance. However, the researcher believes that English phonological awareness alone cannot account for children's English reading performance as reading is influenced by many more factors. Also, English phonological awareness has more impact on other fields. Thus, further studies could have separate tests regarding the English early literacy development (i.e., reading performance and writing performance) for the purpose of identifying the differential effectiveness of phonological awareness to Chinese preschoolers in English early literacy development.

Second, more attention should be given to the design of the measures with more specific tasks on phoneme identification and production to measure each level of phonological awareness and more specific tasks for English reading performance. Thus, Chinese preschoolers' development of phonological awareness could be decoded in more detail and with a deeper understanding.

Finally, in order to make the findings more generalizable, more extensive samples are recommended for future studies, including Chinese preschoolers from different settings (different schools or provinces), samples from different grades and gender. If the findings are consistent with the present study, further exploration in this field is necessary, for instance, find out the EFL learners with reading difficulties and carry out English phonological awareness training studies to help them improve their reading skills.

## References

- Aarnoutse, C., Van Leeuwe, J., & Verhoeven, L. (2005). Early literacy from a longitudinal perspective. *Educational Research and Evaluation, 11*(3), 253–275.
- Asia Society. (2009). *Learning in a Global Age knowledge and skills for a flat world*. NY, New York: Asia Society.
- Berninger V. (2001). *Process assessment of the learner: Test battery for reading and writing*. San Antonio, TX: Psychological Corporation.
- Bryman, A & Cramer, D. (2011). *Quantitative data analysis with IBM SPSS statistics 17, 18 and 19: A guide for social scientists*. Psychology Press, ISBN: 978-0-415-57919-3.
- Catts, H. W., Fey, M. E., Zhang, X., & Tomblin, J. B. (2001). Estimating the risk of future reading difficulties in kindergarten children: A research-based model and its clinical implications. *Language, Speech, and Hearing Services in Schools, 32*, 38-50.
- Cooper, J.D. (2000). *Literacy: Helping children construct meaning* (4th ed.). Boston: Houghton Mifflin.
- Deng & Gao (2009). A Corpus-based Study on Chinese College Students Word Stress Misplacement. *Foreign Language World, 3*, 10-15.
- Education Review Office of New Zealand. (2011). *Literacy in early childhood services: Good practice*. Wellington, New Zealand: Author.
- Ghoting, S. N., & Martin-Díaz, P. (2006). *Early literacy storytimes @ your library: partnering with caregivers for success*. Chicago: American Library Association.
- Gillon, G. T. (2004). *Phonological awareness: From research to practice*. New York: The Guilford Press.
- Good, R. H., & Kaminski, R. A. (2007). *Dynamic Indicators of Basic Early Literacy Skills (6th ed.)*. Eugene, OR: Institute for the Development of Educational Achievement.
- Goswami, U. (2002). In the Beginning Was the Rhyme? A Reflection on Hulme, Hatcher, Nation, Brown, Adams, and Stuart. *Journal of Experimental Child Psychology, 82*, 47-57.
- Hulme, C., Hatcher, P., Nation, K., Brown, A., Adams, J., & Stuart, G. (2002). Phoneme awareness is a better predictor of early reading skill than onset-rhyme awareness. *Journal of Experimental Child Psychology, 82*, 2-28.
- Hu, C. F. (2003). Phonological memory, phonological awareness, and foreign language word Learning. *Language Learning, 53*, 429-462.
- John. (2006). A few simple tips for improving your English. Retrieved from [http://blog.sina.com.cn/s/blog\\_4888b3c1010002oq.html](http://blog.sina.com.cn/s/blog_4888b3c1010002oq.html)

- Kintsch, W., & Kintsch, E. (2005). Comprehension. In S.G. Paris & S.A. Stahl (Eds.), *Current issues in reading comprehension and assessment* (pp. 71-92). New York, Routledge.
- Lafrance, A., & Gottardo, A. (2005). A longitudinal study of phonological processing skills and reading in bilingual children. *Applied Psycholinguistics*, 26, 559-578.
- Lonigan, C. J., Burgess, S. R., & Anthony, J. L. (2000). Development of emergent literacy and early reading skills in preschool children: Evidence from a latent variable longitudinal study. *Developmental Psychology*, 36, 596-613.
- Lundberg, I. (2002). The child's route into reading and what can go wrong. *Dyslexia*, 8, 1-13.
- Lyon, G. R., Shaywitz, S. E., & Shaywitz, B. A. (2003). Defining dyslexia, comorbidity, teachers' knowledge of language and reading: A definition of dyslexia. *Annals of Dyslexia*, 53, 1-14.
- McBride-Chang, C., & Kail, R. V. (2002). Cross - cultural similarities in the predictors of reading acquisition. *Child Development*, 73(5):1392 - 1407.
- Ministry of Education of the People's Republic of China. (2001). *Guidelines for actively promoting the offering of English classes in elementary schools*, Ministry of Education, China. Retrieved from <http://www.edu.cn /20010907/3000637.shtml>
- Muter, V., & Diethelm, K. (2001). The contribution of phonological skills and letter knowledge to early reading development in a multilingual population. *Language Learning*, 51, 187-219.
- Scovel T. (2000). "The younger, the better" myth and bilingual education. *Critical Perspectives on the Official English Movement*. Mahwah, NJ: Lawrence Erlbaum Associates.
- Shu, H., Peng, H., & McBride-Chang, C. (2008). Phonological awareness in young Chinese children. *Developmental Science*, 11(1), 171-181.
- Shoebottom, P. (2011). The differences between English and Chinese. Retrieved from <http://esl.fis.edu/grammar/langdiff/chinese.htm>
- Stanovich, Keith E. (2000). *Progress in understanding reading: Scientific foundations and new frontiers*. New York, NY: Guilford Press.
- Wu, Y. W. (2010). *Cross-language transfer of phonological awareness in Mandarin Chinese-speaking children in Taiwan* (Master's thesis), National Pingtung University of Education, Taiwan. Incorrect APA style
- Yincheong, Cheng. (2002). *New paradigm of borderless education: Challenges, strategies, and implications for effective education through localization and internationalization*. Hong Kong: Hong Kong Institute of Education.