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Phonological Awareness and Word Reading Fluency Among Young Saudi Learners of English

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Abstract

The current study explored the relationship between phonological awareness and word reading fluency among young Saudi English as a Foreign Language (EFL)learners. Two tests were completed by thirty young Saudi EFL learners. The first test comprised 25 questions related to phonological awareness. In the second test, the learners were asked to read a list of English words in one minute, and each student was given a score based on how many words they read per minute. The students scored relatively low on both tests, indicating a deficiency in phonological awareness and difficulty in word reading. The scores in both tests were significantly correlated, however, a regression analysis showed that only phonological awareness at the phonemic level was a significant predictor of the students' performance in the word reading fluency test. The results clearly indicate that Saudi EFL learners could benefit from phonemic awareness training, and future studies should empirically examine its potential for improving Saudi EFL learners' reading fluency.

1. INTRODUCTION

The ability to read is one of the main objectives for most educational systems around the globe. Therefore, much research in the fields of linguistics, education, and psychology has been conducted to understand the development and enhancement of reading skills by typical and atypical learners (e.g., people with dyslexia). The relationship between phonological awareness and reading proficiency among learners has received considerable attention in the literature on reading developmentand, and has indicated a strong correlation between the two (e.g., Castles & Coltheart, 2004; Ehri et al., 2001; Elhassan et al., 2017; Hogan et al., 2005). The majority of this research has focused on children learning how to read in their native language. Far less research has been conducted on children learning their

second language, particularly in foreign language contexts (Al-Tamimi, 2016). The current study thus attempts to find out whether there is a relationship between phonological awareness skills and word reading fluency as a measure of reading proficiency among Saudi learners of English as a foreign language (EFL). This is expected to pave the way for further research to find out whether raising the phonological awareness of Saudi EFL learners would result in improving their reading skill, given the fact that Saudi EFL learners face substantial difficulty in reading (Al-Qahtani, 2016).

1. BACKGROUND

Definitions of phonological awareness in previous studies vary according to which phonological skills they refer to and the size of the sound unit they focus on (Anthony & Francis, 2005). However, there is a general consensus among researchers that phonological awareness can broadly be defined as the conscious "ability to perceive and manipulate the sounds of spoken words" (Castles & Coltheart, 2004, p. 87). The sound units that are usually included in phonological awareness studies are the phoneme, syllable, onset, and rhyme. For example, the one-syllable word *fast* includes the phonemes /f/, /ɑ:/, /s/ and /t/; the onset /f/; and the rhyme /st/. Various tasks can be utilized to measure phonological awareness, such as syllable segmentation (i.e., identification of syllables in a word), syllable deletion, rhyme generation (i.e., providing another word with a similar rhyme), phoneme segmentation, phoneme blending, and phoneme deletion (Gillon, 2017).

In languages that employ alphabetic orthographies, such as English and Arabic, there is an underlying assumption that letters/graphemes (orthography) represent sounds/phonemes (phonology). However, the regularity and consistency of the correspondence between orthography and phonemes vary across languages (Saiegh-Haddad & Geva, 2008). Alphabetic orthographies that exhibit a consistent and regular correspondence between phonemes and graphemes are described as shallow or transparent, whereas orthographies that exhibit lesser degrees of consistency between phonemes and graphemes, such as English, are described as deep or opaque (Frost et al., 1987). Arabic, unlike English, is a transparent language where sounds are represented orthographically in a consistent way, albeit using a different writing system (Taha, 2016). Learning to read includes learning to map orthography to phonology (Ziegler & Goswami, 2005). Thus, the Orthographic Depth Hypothesis assumes that learning to read transparent or shallow orthographies is easier than learning to read opaque or deep orthographies (Katz & Frost, 1992). One would therefore assume that learners of English would be more likely to face reading difficulties due to the lack of

complete correspondence between graphemes/letters and phonemes/sounds. For example, the word *thought* is read as /θɔ:t/. This suggestion has been substantiated by a few previous studies examining the relationship between reading and orthographies among Arab adult learners of English (Fender, 2003; Ryan & Meara, 1991; Saiegh-Haddad & Geva, 2008).

It has long been suggested that phonological awareness is a precursor to reading success among young language learners, and indeed previous research has established a strong correlation between phonological awareness and reading success among children (Castles &Coltheart, 2004; Elhassan et al., 2017; Míguez-Álvarez et al., 2022). Although it is still debated whether this relationship is causal or reciprocal, many studies have shown that raising children's phonological awareness results in enhancing their reading proficiency (Bus & Van IJzendoorn, 1999; Ehri et al., 2001; Wolff & Gustafsson, 2022). The majority of the previous research has been conducted on typical and atypical (reading disorders) children learning how to read in their native languages. Limited research has been conducted on children learning their second or foreign language (Al-Tamimi, 2016).

Al-Tamimi and Rabab'ah (2007) examined whether the provision of phonological awareness training to Jordanian EFL first graders would result in improving their word reading accuracy. Phonological awareness training was found effective in improving the learners' reading ability, and the authors emphasized the importance of integrating phonological awareness into EFL curricula. Al-Tamimi (2016) replicated the study on Jordanian EFL second graders and reached the same conclusion. Ibrahim (2018) attempted to examine the effect of phonological awareness training on the reading ability of poor readers who were studying an EFL course at a Saudi university. The training was found highly effective in improving the ability of the learners. However, the study suffers from two major shortcomings. First, it used training materials related only to phonics (i.e., correspondence between letters and sounds). Second, mispronunciations were counted as accurate readings by the learners. In addition, the learners had already been exposed to English in public schools for nine years as part of the curriculum. Therefore, it is difficult to reach any conclusion from this study about the effect of phonological awareness.

We are not aware of any study that has examined the relationship between phonological awareness and reading proficiency among young Saudi EFL learners. This is unexpected given the fact that the issue is of both practical and theoretical importance. Saudi EFL learners usually face difficulty in reading English; for instance, their scores on the IELTS reading test were below the international average in 2021 (https://www.ielts.org).

Given the strong evidence found in the literature of a close relationship between phonological awareness and reading proficiency among children learning their first language, it is worthwhile examining whether raising Saudi EFL learners'phonological awareness would help them improve their reading skills. Theoretically, it would be enlightening to find out how EFL learners learn to read in a foreign language that employs a different orthographic system.

The current study takes an initial step in filling this gap in the literature. It does so by examining the relationship between phonological awareness skills and reading fluency among young Saudi EFL learners. Two tests were taken by a group of young Saudi EFL learners: phonological awareness and word reading fluency tests. The learners' scores in both tests were correlated to find out how scores in phonological awareness can predict reading fluency. The study also provides insights into the levels of reading fluency and phonological awareness among young Saudi EFL learners.

2. METHOD

2.1 Participants

Thirty female students with a mean age of 13 participated in the current study. They were studying English language in a public school in Saudi Arabia as part of their school curriculum (around 3 hours a week). They were registered in the first year of an intermediate public school (year seven in the Saudi public schooling system) in Taif City in Saudi Arabia. All the participants spoke Arabic as their native languageand started learning to read Arabic at the age of six. English was introduced to them as part of the curriculum around the age of nine in their fourth year of schooling. English is taught in Saudi public schools by nonnative Arabic speakers using a textbook designed by the Ministry of Education. The textbook was designed to teach all the language skills integratively. None of the participants had lived in an English-speaking country before or had received any special English language education apart from what was offered in public schools. The reason for deciding on this sample was to ensure that the participants had a level of English which would be considered beginner but would allow them to be responsive to the tasks at hand. For example, we did not expect children in their fourth or fifth school year to be able to read English and actively participate in the phonological awareness and reading tests. None of the participants had failed any year at school or had any learning or language impairment.

2.2 Measurements

2.2.1 Phonological awareness

The phonological awareness test was adopted with some modifications from *Interventions for All: Phonological Awareness* (Zgonc, 2010). The test comprised 25 items to be answered in 25 minutes. The test items varied from true/false to multiple-choice questions. The test's main questions were translated into the learners' first language (Arabic) to ensure their full understanding of what the test entailed. Various phonological awareness skillswere included in the test: word identification, rhyming, syllabification, and phoneme skills. For instance,the participants were askedto identify word pairs as rhyming or nonrhyming (see Appendix A for the complete test). The test included the following skills: word identification, rhyming, syllable counting, syllablesegmentation, phoneme identification, phoneme blending, phoneme segmentation, and phoneme substitution.

2.2.2 Word reading fluency

A wordreading fluency test was adapted from the *Test of Word Reading Efficiency* (Torgesen et al., 2012). The test was designed for individuals from 6 to 24 years of age as a reliable and quick assessment of word reading skills. The test offers an efficient method for monitoring the development of word reading skills, which are important in the development of general reading ability, and is characterized by its ease of administration and speed (Tarar et al., 2015). The test includes a list of words with an increasing difficulty level (see Appendix B) which can be read within 45 seconds. The number of correct words per minute (CWPM) is taken as an index of reading fluency. Reading fluency is widely used to measure overall reading proficiency(Hudson et al., 2005). It has been shown to be a reliable measure of overall reading competency and a "salient characteristic of skillful reading" (Fuchs et al., 2001, p. 253). Reading fluency was found also to correlate strongly with reading comprehension, especially among young learners (Price et al., 2016).

2.3 Procedures

The two tests were conducted during the national COVID-19 lockdown in Saudi Arabia. The first author met the participants online via Microsoft Teams during one of their regular English language classes. The participants were provided with a link to the phonological awareness test. They were asked to click on the link and answer all the questions, with 25 minutes to complete the task. The first author was present online to answer any questions and provide technical support if needed. Afterwards, each of participants met individually online with the first author, where they were presented with the list of words in

Appendix B and asked to read as many of the words as possible in one minute.

3. RESULTS

The number of correct answers in the phonological awareness test (N = 25) was calculated for each student (N = 30). In addition, the results were broken down according to the level of phonological awareness: (word: N= 2; rhyme: N = 4; syllable: N = 6; phoneme: N = 13). The variation in the number of test items per level was due to thelevels'number of different subskills. A percentage of correct answers was calculated for overall awareness, as well as for each level. Table 1 below displays the means and standard deviations of the calculated percentages of correct answers.

Table 1. *Means and Standard Deviations of the Percentage of Correct Answers in the Phonological Awareness Test.*

	Mean	Standard Deviations
Overall	64.80%	18.97
Word	63.33%	36.984
Rhyme	65.83%	30.430
Syllable	62.22%	28.67887
Phoneme	65.89%	17.91901

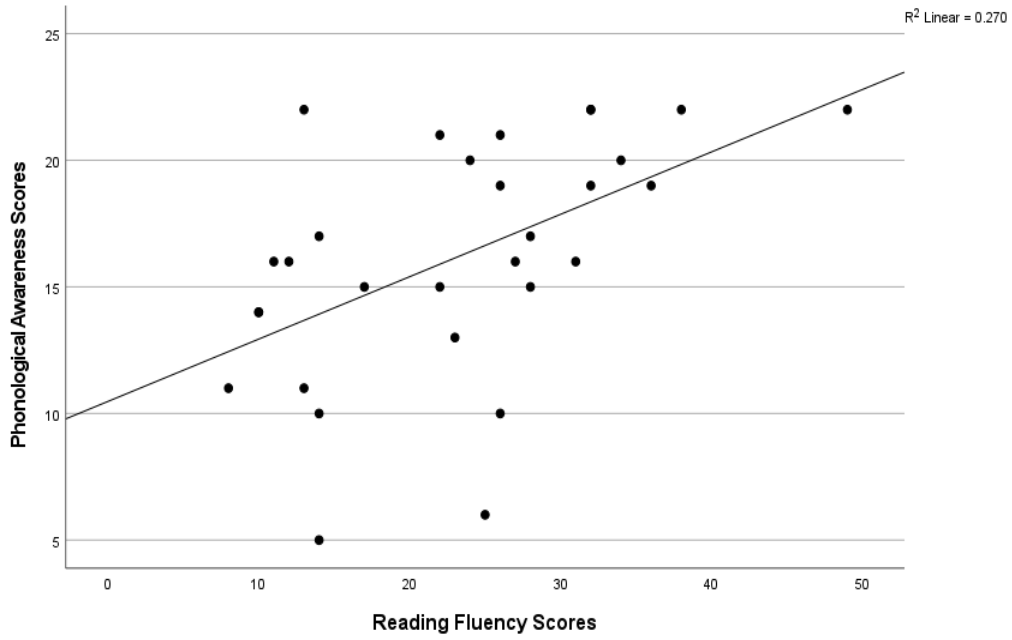
The results clearly indicate the students' overall relatively low performance in the phonological awareness test. This is somewhat surprising given the fact that they have been studying English as a foreign language for almost four years as part of their public school curriculum. The students also demonstrated low performance in the word-reading fluency test (*CWPM = 23.23*; *SD* = 10*)*. To establish whether the students' scores on the phonological awareness test correlated with their scores on the reading fluency test, a series of *Pearson's r* correlation analyses were run, as reported in the Table 2 below.

Table 2. *Correlation Between Phonological Awareness Scores and Word Reading Fluency Scores.*

Overall	Word	Rhyming	Syllable	Phoneme
.520	.131	.381	.458	.479
p = .003	p = .490	p = .038	p = .011	p = .007

The results showed a significant correlation between the students' word reading fluency and their phonological awareness. All the levels of phonological awareness, except for the word level, correlated significantly with the students' scores in the reading fluency test. A linear regression model was fitto find out whether overall phonological awareness could predict the students' performance in the reading fluency test. Phonological awareness was found to explain 27% of the variation in the students' reading fluency scores (R^2 = .270; F = 10.36 (1,28); p <0.01). Figure 1 below illustrates the regression results.

Figure 1. *Scatterplot of the Students' Scores in the Phonological Awareness and Word Reading Fluency Tests with a Fitted Regression Line.*



Another linear regression model was fit to find the relative contribution of the levels of phonological awareness to the variation in the scores obtained for the reading fluency test. Only phonological awareness at the phonemic level contributed significantly to the variation in the scores for the reading fluency test (R^2 = .230; F = 8.35 (1,28); p <0.01).

4. DISCUSSION

The present study examined the relationship between phonological awareness and word reading fluency among young Saudi EFL learners. Thirty female Saudi students studying at an intermediate public school in Saudi Arabia took two tests: a phonological awareness test and a wordreading fluency test. The learners exhibited relatively low performance in both tests, indicating their deficient phonological awareness and low reading proficiency. The results of the reading test lend further support to previous studies pointing

out the difficulty facing Saudi EFL learners in reading English (e.g., Al-Qahtani, 2016; Ibrahim, 2018). Future studies should investigate the reasons behind such low proficiency among Saudi EFL learners.

The results also showed a significant correlation between the results of both tests, corroborating the existing strong evidence found in previous studies that have examined the link between phonological awareness and reading fluency among first language learners (Castles & Coltheart, 2004; Elhassan et al., 2017; Hogan et al., 2005; Saiegh-Haddad & Geva, 2008). The results of the phonological awareness test at all levels, except for the word level, showed a significant correlation with the results of the reading test. However, a statistical regression analysis indicated that only awareness at the phonemic level was a significant predictor of the students' performance in the reading test. This finding is in line with Bus and Van IJzendoorn (1999) and Ehri et al. (2001), who showed that training at the phonemic level resulted in a significant improvement in early reading skills. Future research should examine whether raising the phonemic awareness of the Saudi EFL learners would improve their reading fluency.

It is difficult to explain the low performance of the young Saudi EFL learners in both the reading and phonological awareness tests. However, findings in the literature pertaining to non-Saudi Arab EFL learners of English may provide a potential explanation for such low performance and the apparent difficulty. A few previous studies have suggested that the difference between Arabic and English orthographic systems, as discussed by the Orthographic Depth Hypothesis (Katz & Frost, 1992), could cause reading difficulty for Arab learners of English (Fender, 2003; Ryan & Meara, 1991; Saiegh-Haddad & Geva, 2008). For this reason, Arab learners of English may benefit from special training or teaching on how to read English written texts and appreciate the differences between English and Arabic orthographic systems. One potentially successful method is raising learners' awareness of the English phonological system, especially at the phonemic level. This method was found beneficial to young Jordanian EFL learners of English (Al-Tamimi, 2016). Further research is still urgently needed to identify methods of intervention that can raise Saudi learners' phonological awareness and consequently their reading skills.

5. CONCLUSION

The findings of the current study clearly show the low reading proficiency level of young Saudi EFL learners despite the fact they had been studying English for four years. Their low proficiency level could be attributed partially to their insufficient phonemic

awareness. Therefore, future research should explore the potential of raising learners' phonemic awareness in order to improve their reading proficiency level.

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Appendix A

Phonological Awareness Test

1. How many words are there in the sentence: *Terry loves to play soccer*?
a- 4
b- 5
c- 6
d- 7

2. How many words are there in the sentence: *Yesterday it rained*?
a- 2
b- 3
c- 4
d- 5

3. Does *sweater* rhyme with *better*?
a- Yes
b- No

4. Does *bring* rhyme with *began*?
a- Yes
b- No

5. Which of the following words can rhyme with the word *handle*?
a- Pretty
b- Candle
c- Cold
d- Hand

6. Which of the following words rhyme with the word *cake*?
a- Bake
b- Book
c- Take
d- Lake
e- Look

7. How many syllables are in the word *Fantastic*?
a- 1
b- 2
c- 3
d- 4

8. Which of following words has two syllables?
a- Make
b- Sun
c- Happy
d- Free

9. The word *pencil* can be divided into the following syllables:
a- pen.cil
b- pe.ncil
c- penci.l
d- p.en.cil

10. If we add *prob* to *lem* we get the word *problem*?
a- True
b- False

11. The correct way to divide the word *Banana* into syllables is *Bana.na*
a- True
b- False

12. The word *Forget* without the last syllable is:
a- For
b- Forg
c- Forge

13. What is the first sound in the word *fish*?
a- /f/
b- /s/
c- /v/

14. When we addthe letter *n* to *est*,we get the word *nest*.
a- True
b- False

15. The last similar part in the words *fear*, *pear*, *hear* is:
a- ear
b- ar
c- r

16. The sounds in the word *shop* are:
a- /s/, /h/, /o/, /p/
b- /sh/, /o/, /p/

17. The sounds /p/, /l/, /a/, /n/, /t/ make upthe word *plant*.
a- True
b- False

18. There are five sounds in the word *truck*.
a- True
b- False

19. How many sounds are in the word *name*?
a- 1
b- 2
c- 3
d- 4

20. The word *tape* without /t/ make up the word*ape*:
a- Yes
b- No

21. The word *inch* without the last sound is:
a- in
b- inc

22. Adding /b/ to the word *end* creates the word *bend*:
a- True
b- False

23. Replacing the first sound in the word *well* with the sound /f/ creates the word *fell*:
a- True
b- False

24. How many sounds are in the word *good*?
a- 1
b- 2
c- 3
d- 4

25. The words that start with the sound /f/ are:
a- Flag
b- Shop
c- Phone
d- Half

Appendix B

List of Word Reading Fluency

Is	Jump	inside	absentee
Up	Part	plane	advertise
Cat	Fast	pretty	pleasant
Red	Fine	famous	property
Me	Milk	children	distress
To	Back	without	Information
No	Lost	finally	recession
We	Find	strange	understand
He	Paper	budget	emphasis
The	Open	repress	confident
And	Kind	contain	intuition
Yes	Able	justice	boisterous
Of	Shoes	morning	plausible
Him	Money	resolve	courageous
As	Great	describe	alienate
Book	Father	garment	extinguish
Was	River	business	prairie
Help	Space	qualify	limousine
Then	short	potent	valentine
Time	Left	collapse	detective
Wood	people	elements	recently
Let	almost	pioneer	instruction
men	waves	remember	transient
baby	child	dangerous	phenomenon
new	strong	uniform	calculated
stop	crowd	necessary	alternative
work	better	problems	collective