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تأثير تدريس أسماء الحروف الإنجليزية قبل أصواتها على القرّاء المبتدئين من متعلمي اللغة الإنجليزية كلغة أجنبية

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الملخص

بحثت هذه الدراسة تحديات القراءة التي يواجهها طلاب المرحلة الجامعية المتخصصين في اللغة الإنجليزية في المملكة العربية السعودية، ممن تلقّوا في المدارس تعليماً تقليدياً يعتمد على تعليم أسماء الحروف أولاً. شارك في الدراسة ستة عشر طالباً جامعياً من الذكور (تتراوح أعمارهم بين 20 و21 عاماً) من ثلاث جامعات سعودية، حيث أتمّوا بروتوكولات التفكير بصوت عالٍ أثناء قراءة نصوص باللغة الإنجليزية، تلاها تقارير لفظية استرجاعية لاستكشاف وعيهم المعرفي بصعوبات القراءة لديهم. كما شارك ستة من أعضاء هيئة التدريس في الجامعات في مقابلات لتقديم وجهات نظرهم حول تحديات القراءة التي يواجهها المشاركون. وقد كشف تحليل 3,219 خطأً في القراءة و399 تعليقاً لفظياً أن المشاركين أظهروا استراتيجيات محدودة في فك رموز الكلمات الصوتية، معتمدين على التعرف البصري على الكلمات ومعرفة أسماء الحروف عند مواجهة مفردات غير مألوفة. وشكّلت الأخطاء الصوتية 37% من إجمالي أخطاء القراءة، وكانت السبب الرئيسي وراء 90% من صعوبات الفهم. وقد عزا كلٌّ من الطلاب وأعضاء هيئة التدريس هذه التحديات المستمرة إلى ضعف تعليم الصوتيات خلال المراحل المبكرة من تعلم اللغة الإنجليزية. تُشير هذه النتائج إلى أن المناهج التعليمية التي تعتمد على تعليم الصوتيات أولاً قد تكون أكثر فاعلية في دعم تنمية مهارات القراءة باللغة الإنجليزية كلغة أجنبية، و مع ذلك لا تزال هناك حاجة إلى دراسات أوسع تشمل فئات سُكانية متنوعة للتحقق من هذه التوصية الأولية. كما ناقشت هذه الدراسة آثار هذه النتائج على تدريب المعلمين والمناهج الدراسية.

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The Effect of Teaching English Letter Names Before Their Sounds to Novice EFL Readers

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Abstract

This qualitative study investigated the reading comprehension challenges experienced by Saudi English-major undergraduates who received conventional letter-name-first instruction in schools. Sixteen male English-major undergraduates (ages 20–21) from three Saudi universities completed think-aloud protocols (TAPs) while reading authentic English texts, followed by retrospective verbal reports (RVRs) probing their metacognitive awareness of reading difficulties. Six university lecturers participated in semi-structured interviews to provide instructors' perspectives on students' reading challenges. TAP and RVR data were analyzed using thematic analysis to identify patterns in reading processes and error types; lecturer interviews were triangulated to validate student-reported difficulties. Analysis of 3,219 reading errors and 399 verbal comments revealed that participants demonstrated limited phonological decoding strategies, relying instead on visual word recognition and letter-name knowledge when encountering unfamiliar vocabulary. Phonetic errors, particularly vowel mispronunciations reflecting letter-name rather than sound knowledge, comprised 37% of all reading errors and underlay 90% of comprehension difficulties. Both students and lecturers attributed these persistent challenges to insufficient phonics instruction during early English learning. These findings suggest that phonics-first instructional approaches may better support EFL literacy development in Arabic-speaking contexts, though larger-scale studies with diverse populations are needed to confirm this tentative recommendation. Implications for teacher training and curriculum reform are discussed.

Keywords: *letter names*; *orthography*; *phonic awareness*; *phonology*; *sounds*

Introduction

The process of learning to read in English as a foreign language (EFL) represents a complex cognitive challenge, particularly for learners whose first language employs substantially different orthographic and phonological systems. At the heart of this challenge lies the fundamental question of how novice readers acquire and integrate two critical components of alphabetic literacy: letter-name knowledge and letter-sound (grapheme-phoneme) correspondence. While extensive research has established that both letter names and letter sounds contribute to reading development (Piasta & Wagner, 2010), a critical debate persists regarding the optimal sequence for introducing these elements to beginning readers. This question carries particular significance for adult EFL learners from Arabic-speaking backgrounds, who face the dual challenge of navigating English's opaque orthography while simultaneously transferring literacy skills from a highly transparent alphabetic system.

The theoretical foundation for alphabetic reading instruction rests on the well-established relationship between phonological awareness and reading acquisition. Decades of research have demonstrated that phonological awareness serves as a foundational skill for literacy development across languages (Melby-Lervåg et al., 2012). In first language (L1) contexts, both phonemic awareness and letter knowledge are necessary for accurate understanding of how letters in printed words map onto spoken words (Bowey, 2005). Hulme et al. (2012) demonstrated through intervention studies combined with mediation analyses that reading programs teaching letter-sound relationships together with phoneme awareness significantly improved long-term literacy skills. However, the vast majority of this research has focused on young children learning to read in their first language, leaving substantial gaps in our understanding of how these principles apply to adult second language (L2) learners.

The complexity of English orthography amplifies these instructional challenges. Unlike languages with transparent orthographies where grapheme-phoneme relationships are consistent and predictable, English exhibits a high degree of polyphony (Timmer & Schiller, 2012), with approximately 40 phonemes represented by only 26 letters across 250 different spelling patterns (Simon et al., 2006). This opacity creates what Timmer and Schiller (2012, p. 40) describe as "competition between multiple pronunciation options," making the reading process significantly more demanding. Research comparing reading acquisition across orthographies consistently demonstrates that children learning transparent orthographies develop reading skills earlier than those learning opaque systems (Wimmer & Hummer, 1990). For adult Arabic-speaking EFL learners, this orthographic contrast is particularly pronounced: Arabic features a highly consistent one-letter-one-sound correspondence, whereas English presents ambiguous and complex vowel-sound relationships that Arabic learners find especially challenging (Saigh & Schmitt, 2012).

These gaps are not merely academic; they have direct practical consequences. In Saudi Arabia and many Arabic-speaking countries, the predominant pedagogical practice involves teaching English letter names first, often through rote memorization with systematic phonics instruction delayed until much later or omitted entirely (Mourtaga, 2006). This practice persists despite the absence of empirical evidence supporting its effectiveness for EFL learners and despite the theoretical arguments suggesting potential disadvantages (Mourtaga, 2006). The need for investigation in this area is further underscored by the specific phonological challenges Arabic-speaking learners face when acquiring English literacy. Research has documented systematic difficulties Arabic speakers experience with English phonemes absent in Arabic, including /p/, /v/, and particularly the complex English vowel system (Ryan & Meara, 1991). Saigh and Schmitt (2012) found that Arabic ESL learners struggle specifically with vocabulary word forms due to these phonological differences. Given these documented phonological challenges, the question of whether

teaching letter names (which often contain misleading phonological information for English learners) before systematic sound instruction exacerbates or mitigates these difficulties becomes critically important.

The present study addresses these gaps by investigating the effects of letter-name-first instruction on Saudi EFL undergraduate students' reading processes and comprehension. Unlike previous research, this study employs qualitative methodology to examine the actual cognitive processes students employ during reading and to explore their metacognitive awareness of their own reading challenges. By focusing on adult learners who received traditional letter-name-first instruction in schools but only basic phonics as undergraduates, the study provides a unique window into the long-term consequences of instructional sequencing decisions.

Literature Review

Grapheme/Phoneme Correspondence

Research has shown that phonological awareness training contributes to early reading performance and that phonological deficits are the most common source of difficulties with reading (Waked et al., 2024). According to Ehri (2022) the vast majority of research has supported the conjecture that meaning cannot be accessed from orthography alone but requires activation of a word's phonology.

There is a close relationship between phonological skill and learning to read. Both phonemic awareness and knowledge of letters are necessary for an accurate understanding of how letters in printed words map onto spoken words (Bowey, 2005; Melby-Lervåg et al., 2012). Hulme et al. (2012) found that a reading program which taught knowledge of letter-sound relationships together with phoneme awareness improved long-term literacy skills.

Languages vary in the transparency of grapheme/phoneme/morpheme relationships and English is particularly complex with a high degree of polyphony (Timmer & Schiller,

2012), where the mapping of graphemes to phonemes is complex and inconsistent (Simon et al., 2006). Although there are 26 letters in the English alphabet, there are approximately 40 phonemes in the English language, and its sounds are represented in 250 different spellings which are co-articulated. Phoneme/grapheme relationships are not obvious and must be taught.

Timmer and Schiller (2012) stated that where a grapheme is associated with multiple phonemes it may create a competition between multiple pronunciation options which makes reading more difficult. Vazeux et al. (2020) found that children learning to read orthographies which are consistent, develop reading skills earlier than those with inconsistent orthographies.

The findings of these studies demonstrate the necessity of phonic awareness in L1 reading development. However, in the mature reader, it becomes an unconscious process so that readers are aware of the meaning only and not of the process that leads the printed letters to meaning (Lee, 2009).

Phonological Development in L2

Many factors influence the process of learning to read in a second language. For example, knowledge of the L1 sound system and its relationship to L1 graphemes, is transferred into L2 learning. Bernhardt's (2005) compensatory model, proposed that L2 that phonological awareness, including factors such as awareness of text structure, and alphabetic correspondence brought from L1, constitutes 50% of L2 reading ability.

The effectiveness of the transference of these skills and knowledge depends on the closeness of the relationship between the two languages (Hamada & Koda, 2011). For example, Abu Ahmad and Share (2025) observed that Arabic has one letter for each sound so that Arab students of English struggle with its ambiguous and unstructured vowel-sound correspondence. Farran et al. (2012) studied the relationship between the Arabic and English

languages, and reading in Arabic/English bilinguals and found associations between the phonological awareness skills of the two languages.

These findings suggest that it is essential for awareness of English phonics and phoneme/grapheme correspondence and discrimination, to be taught from the very beginning of teaching L2 learners to read in English.

The Effect of Teaching Phonological Awareness

Research suggests that early interventions have a long-term effect on reading ability. Herrera (2023) found that correspondences taught to novice learners will have an impact on their reading ability. Vadasy and Sanders (2021) recommend that phonological awareness needs to be taught early. Phonological training has been demonstrated to improve reading ability in many studies. For example, Johnson and Tweedie (2010) found that phonemic awareness instruction brought about large improvements on every language skill tested and Zhang et al. (2023) also found that knowledge of sound-to-name correspondence can help children connect letters with their sounds and improve reading comprehension.

How phonological awareness is acquired is also a matter of individual difference. Connelly (2002) states that in L1, it may be possible for grapheme/phoneme correspondence to be improved through simple exposure and without specialized instruction. Furthermore, Hulme et al. (2005) found that children were able to separate phonemes for which they did not know the corresponding letter. These studies suggest that successful phoneme manipulation does not depend on specific knowledge of letter/sound correspondence.

However, in the L2 context, such exposure is limited and deliberate instruction may be necessary. While it is clear that knowledge of the alphabet is necessary to learn both reading and spelling in English (Ehri, 2022), the question becomes how such knowledge is best taught. Castles et al. (2009) found that neither prior training on letter shapes nor on phonemic awareness enhanced learning of letter/sound correspondences and concluded that

instruction is needed to link the two. Share (2004) found phonological awareness and letter sound learning were positively correlated in children who knew letter names. However, Evans et al. (2006) found that other abilities need to be taken into account and Treiman et al. (2008) found that individual differences did not mask the effect of letter structure effects.

The Order of Teaching Letter Names and Sounds

A number of researchers claim that teaching letter names rather than their sounds prior to reading is potentially harmful (Alzahrani & Algethami, 2023; Levin et al., 2006). In a study comparing reading outcomes, Ellefson et al. (2009) found that English children performed better than American children on letter-sound tasks. They found that children began by using the first-learned set of labels to inform their learning of the second set, but that differences in reading ability between the two nationalities declined with age. Levin et al. (2006) also found that learning the sounds of letters facilitated subsequent learning of letter names, but not vice versa. This suggests asymmetry and that letter sounds should be taught before letter names.

On the other hand, Vazeux et al. (2020) found that children learned the sounds of letters more successfully when they already knew their names. Findings from studies by De Jong and Olson (2004) and Foulin (2005) suggest letter name knowledge may assist the development of phonological awareness because letters in words direct children to treat spoken words as segmentable into sounds. Cardoso-Martins et al. (2011) also found that letter-name knowledge enhanced letter-sound knowledge but only for letters where the name was of the CV structure. For those with VC structure, rhyme and alliteration (training in phonological awareness) improved phonetic learning.

Al-Sukaiti (2023) argues that the responsibility for less atomistic and more holistic phonological teaching rests firmly with EFL teachers and their trainers who need a more accurate understanding of English sound systems and their inter-relationships than they

currently possess. Mourtaga (2006) describes the negative impact of traditional systems which emphasize memorization of fixed patterns and advocates what he calls "the Third World" toward more interactive teaching methods.

Research Contribution

Huo and Wang's (2017) systematic review of phonological-based instruction in EFL contexts synthesized 15 studies at primary school level, explicitly noting the focus on young learners and calling for research at other educational levels (e.g., university level). Only one Saudi study (Ibrahim, 2018) examined phonological awareness instruction with adult Arab EFL learners, but it did not investigate letter-name-first sequencing effects specifically. Not many studies examine how letter-name-first instruction affects adult Saudi EFL learners' reading processes, despite the fact that findings from children may not generalize to adult learning contexts and adults may have fossilized pronunciation patterns from early instruction. Furthermore, existing research relies predominantly on quantitative outcome measures and lacks qualitative process-oriented studies using think-aloud protocols to understand how learners actually process text (Huo & Wang, 2017).

One of the purposes of this research paper was to understand the effect of this ambiguity on adult EFL students' English reading skills, and to develop suggestions for the more effective teaching of English reading.

Research Questions

The study sought to answer a number of questions relating to reading comprehension challenges faced by undergraduate Saudi Arabian EFL students. These questions are:

1. What are the effects of learning English letter names before their sounds on Saudi EFL students' reading abilities?

2. What phonological challenges do students attribute to their letter-name-first learning experience?

3. To what extent do students and lecturers perceive letter-name-first instruction as contributing to reading comprehension difficulties?

Methodology

There were three main areas of inquiry; first to identify difficulties which affect the students' reading comprehension of English texts. Second, to explore these difficulties from their perspectives in order to understand the challenges they face. Third, to explore lecturers' perspectives on their students' difficulties. Most studies of EFL reading comprehension difficulties have employed a quantitative approach to testing the effectiveness of intervention strategies designed to remedy a specific problem. However, the methodology of this study was informed by the interpretivist approach which constituted the rationale for the collection of narrative data and qualitative analysis in order to develop a comprehensive understanding of the complex reasons behind the difficulties students faced.

Participants

The sample was both purposive (Henderson, 2011) and convenience (Cohen et al., 2000). Participants were recruited from a specific group but also on the basis of ease of access to the researcher and willingness to participate. Students volunteered to take part, aware of the opportunity to both learn from the experience and to say what was on their minds. The self-selecting sample consisted of 16 male undergraduates aged between 20 and 21 years, pursuing a bachelor's degree with English as their major subject. They were half-way through their four-year courses at three different Saudi universities and came from a culturally homogeneous social background.

In addition, six male lecturers from the English Departments of these universities also volunteered to take part. These all had either a master's or PhD level qualification in English, and were responsible for the teaching of English reading, though none were reading

specialists. They were all expatriates, five from Arabic-speaking countries such as Egypt, Sudan and Jordan, and one from India.

Data Collection Methods

Three data collection methods were employed; first, the think-aloud protocol (TAP). This is a form of verbal report designed to uncover psychological processes that a person goes through to perform a task (Ericsson & Simon, 1993; Færch & Kasper, 1987). In second language research, it has been widely used to access learners' mental processes and gain data by identifying their processes and strategies. It is widely considered the best method to access reading aloud processes and discover reading comprehension difficulties in a real-life situation (Whitney & Budd, 1996). Participants in this study were provided with an English reading task and asked to read it aloud and simultaneously verbalize their thoughts. They were instructed that their verbalizations could be in whichever language they preferred (i.e., English or Arabic) and these were audio-taped. Sixteen students volunteered to participate in this protocol.

Second, the TAP was followed by a second verbal protocol; the Retrospective Verbal Report (RVR). Retrospective reports are obtained after the participant has finished the initial task, with the purpose of clarifying information obtained from it. Rankin (1988) suggested the RVR as a safeguard which provided an additional and more comprehensive understanding of the phenomenon under investigation. In this study, during the RVR, the TAP audiotape was replayed to the participant and stopped at key places to enable direct questioning by the researcher about points of interest. For example, participants were asked to provide explanations for reading behaviors such as repeating a word, for errors such as of pronunciation and to reflect and elaborate on their think-aloud comments. The RVR was conducted in Arabic and was also audio-taped. Nine of the 16 students volunteered to participate in this protocol. Student participants were trained in the TAP procedure in order to familiarize them with the method before taking part in the data collection.

Third, participants were interviewed in student semi-structured interviews about their experience of learning to read English text and difficulties they encountered while reading. Interviews enabled participants to express and discuss their own perceptions. The interview in this study was semi-structured, enabling the researcher to flexibly follow-up responses to standard questions with supplementary questions where they seemed productive (Grix, 2018). It was conducted in Arabic in order to make it easier for the 16 participants to express themselves. The lecturer semi-structured interview was also conducted to gain additional, deeper insight into students' reading difficulties. Six lecturers took part and the interviews were conducted in English.

Together these methods enabled the researcher to develop a clear understanding of participants' awareness of their reading comprehension difficulties when reading English text.

Data Collection Materials

To ensure that participants had not previously encountered the text, it was taken from a textbook used for teaching English reading at the same level at a different College. The text was expository in nature, 334 words in length and selected on the basis of reading level, content knowledge and interest, linguistic difficulty, suitability to Saudi Arabian cultural values, length, layout and support given by illustrations. In order to be challenging and expose reading difficulties, it was of moderate complexity. Alderson and Urquhart's (1992) Fog Index (based on word length, syllables and sentence length) was used to calculate its readability measured at 13.27: a score under 16 is deemed suitable for EFL undergraduate students. Two EFL experts corroborated the choice of text.

Procedure

The TAP and RVR were conducted in quiet rooms at the students' universities. Both protocols were administered under standardized environmental conditions (e.g., light, seating, temperature). The TAP took approximately 35 minutes to complete and if the student was

happy to continue, the RVR followed immediately, taking an additional 15 minutes. After a short break, interviews were then conducted in the same room and took approximately 45 minutes. Interviews with lecturers were conducted in a variety of settings, depending on their convenience, and took approximately 30 minutes.

Student audiotapes were transcribed and Arabic responses (i.e., student TAP, RVR and interview responses) were translated into English. Lecturers' interviews were also transcribed.

Trustworthiness

Because this is qualitative research, reliability and validity fall under the umbrella of "trustworthiness" of the data. A number of measures were taken to ensure this. To ensure that the student and lecturer interviews provided parallel information, the first draft interview schedule was revised by supervisors, and circulated to experts for comment and consideration.

The transcription, translation and recording of the TAP, RVR and both student and lecturer interviews, was triangulated and cross-checked. Transcripts of both student and lecturer interviews were emailed to participants who were asked to validate their accuracy. A copy of all transcripts, together with translations, was also sent to two expert colleagues, who reviewed them. Some minor amendments were made to the transcripts as a result.

Ethics

Consent for the research to take place was obtained from the Saudi Cultural Bureau in London, the Vice-Principals of the three Universities and the Heads of the English Departments who approved requests for cooperation, and encouraged both students and lecturers to take part.

The researcher met the students in class and explained the value of the research and its potential significance to Saudi students, culture and the university. All participants

(including lecturers) were reassured that they were under no obligation to participate and made aware of their rights in terms of consent, privacy, confidentiality and right to withdraw from the study. Each participant signed a consent form confirming this immediately prior to participation. To ensure anonymity, both students and lecturers were allocated numeric pseudonyms (e.g., S1-16 and Lr1-6).

Data Analysis

TAP

During the TAP, reading comprehension challenges surfaced, first in comments students made while reading. Each time a new type of comment was made, a corresponding code was formed and comments which indicated a similar type of comprehension difficulty were grouped under a single code. Second, difficulties were also evidenced in behavior exhibited by students while reading (e.g., omitting a word). These were noted on the TAP transcript and a code was formed for each type. As codes developed, different themes were identified, relating to lexical, pronunciation and other types of reading difficulty. Third, difficulties were also evident from observations made by the researcher as he listened to the student reading and to the playback of the TAP. Each student transcript was coded and the total number of each type of comment or behavior exhibited was entered for each student into the correct category of the coding framework.

RVR

Because of the diversity of student reading, RVR questions were not uniform. For this reason, questions and responses were entered verbatim into a table to facilitate comparison. A number of themes were identified, such as why students read slowly (e.g., hesitantly, word-by-word), why they struggled with particular words or why they mispronounced particular sounds.

Interviews

Student and lecturer interviews were analyzed in a very similar way. Responses were coded as they were encountered. Some were dualistic (e.g., "yes/no," "do/don't") and allocated to a straightforward code. If additional comments were made, sub-categories were formed. Different responses were allocated different codes and atypical responses were individually coded. As dominant themes emerged, the findings for each question were summarized. Interviewees often gave responses which included a number of different codes.

Results

The findings from the study showed that students experienced many reading comprehension difficulties related to phonological shortcomings.

Findings from the TAP

Students made a total of 399 comments relating to comprehension difficulties, of which 6.5% related directly to phonology (see Table 1).

Table 1

Student Comments During the TAP Relating Directly to Phonetic Issues

Category of comment	Type of comment	No.	%	Example of comment
Reading difficulties	Confusing similar sounds	2	0.5	"private," "protestors," "property"
	Difficult to pronounce	9	2.3	"de..mo..nstratshon [demonstration] is difficult for me"

Hard to read/remember	15	3.8	"these are hard to read"
Total	26	6.5	

Note. n = 26 comments out of 399 total comments made during TAP protocols (6.5%).

Students also made 3,219 reading errors during the TAP, 37% of which related to problems with pronunciation and lack of phonic awareness (see Table 2). These ranged from the mispronunciation of vowels and consonants to the omission or insertion of letters and entire syllables, and the mispronunciation of entire words.

Table 2

Student Errors During the TAP

Type of error	No. errors	Examples
Mispronouncing vowels (apart from "u")	246	"mall" → "male"
Mispronouncing "u"	54	"u" in "guilty"
Omitting vowels	76	"gatherings" → "gathrings"
Inserting vowels	34	"men" → "mean"
Combining double vowel	113	"ea" in "sweat"
Mispronouncing consonant	316	"ci" → "k" in "social"
Inserting consonant	35	"illegally" → "ilyglillgly"
Omitting consonant	25	"parts" → "part"
Hard and soft consonants	18	"ch" → "sh"
Pronounce silent consonant	53	"l" in "would," "gh" in "fight"
Added a syllable	15	"arrest" → "arrested"
Separating syllables	102	"freedom" → "free" + "dom"

Type of error	No. errors	Examples
Mispronouncing stable final syllable	71	"ti" in "demonstration"
Mispronouncing word	27	"there" → "three"
Gave up	13	Stopped trying to say "suburbs"
Total	1,198	

Mispronunciation

Vowels

Many vowel mispronunciations were the result of students pronouncing the letter by its name, rather than sound. Table 3 shows examples of errors of this type.

Table 3

Mispronunciations of English Vowels

Letter	Letter name	Word	Student pronunciation
A	Long A	private	priv – eight
	Long A	mall	male
E	Long E	ended	ee – nded
	Long E	men	m- ee-n
I	Long I	illegally	eye – legally
O	Long O	shopping	sh – ow - pping
	Long O	freedom	free-dome
U	Long U	public	p – you – blic
	Long U	upset	you-pset
	Long U	guard	g-you-ard
Compound vowel	EO	people	p-eeyo-ple
	EA	sweatshops	Sw-ee-tshops, sw-ate-shops

Students consistently pronounced vowels by their letter names (e.g., E = "ee") rather than their phonetic sounds in context. These errors result from letter-name-first instruction rather than systematic phonics instruction.

Consonants

Several consonants were mispronounced, where one consonant was replaced by another (see Table 4).

Table 4

Mispronunciations of English Consonants

Letter	Arabic phonology	English phonology	Substitution	Example
G	soft only	soft and hard	Soft /ʤ/	guilty – "juilty"
P	Absent	Present	/b/	public - "bublic"
Q	Absent	/kw/ sound	/kju/	Question – "queue-estion"
R	Rolled /r/	Unrolled /ɹ/	Rolled /r/	arrested – "a-rrrr-ested"
V	Absent	Present	/f/	Leave – "leaf"

Students substituted Arabic phonemes for English phonemes that are absent in Arabic or pronounced differently. These substitution errors reflect negative L1 transfer and lack of explicit phonics instruction on English consonant sounds.

Findings from the RVR

Many questions during the RVR related to struggles students experienced with phonics. Direct questioning about these led to clear emergent themes. Students read slowly, trying to pronounce words correctly in order to understand their meanings. They were concerned about making pronunciation errors and therefore comprehension errors, and this interfered with their reading fluency. Some attended only to the beginnings of words, and substituted words with similar beginnings with which they were already familiar. This shows a lack of phonic discrimination.

Table 5

Responses to RVR Questions

Category	Type of question	No.	Examples
Slow/hesitant reading	Why do you pause between words?	7	"There are some words I do not understand…the ones I cannot pronounce correctly."(S1)
Reading difficulties	What were the greatest difficulties you faced when reading the text?	8	"I get stuck with pronouncing words which are new or long." (S1) "It (demonstrations)…is hard to pronounce and understand." (S7)
Pronunciation	Why do you change the pronunciation in this way?	6	"I have never learned this" [final stable syllables] (S13) "We don't have these sounds in Arabic" (S4)
Reading strategies	Why did you repeat that word?	4	"Sometimes I re-read the word twice…I try to understand it and pronounce it correctly." (S2)
Comprehension	Do you understand the meaning of words you have substituted?	7	"I think because they have similar shapes and letters." (S5)

Note. Letters and numbers in parentheses indicate the student participant ID.

Some of these challenges resulted from L1/L2 discrepancies. For example, S4's comment on pronunciation (see Table 5) clearly showed that differences between the sound systems of Arabic and English caused both pronunciation and comprehension difficulties. Despite this, S2's comment on reading strategies (see Table 5) showed that students re-read repeatedly in order to both pronounce a word correctly and understand it. S13's comment on pronunciation (see Table 5) shows that students had not been taught pronunciation strategies to assist them in their efforts to understand what they read.

The RVR comments clearly illustrated the link between phonological errors and comments made during the TAP that were not overtly about phonics (see Table 6). For example, S1's comment on reading difficulties (see Table 5) makes a very clear link between phonics and the failure to comprehend new or long words. These constituted 31.82% of the

TAP comments (see Table 6). S7's comment on reading difficulties (see Table 5) also makes a very clear link between pronunciation difficulties and comprehension failure which constituted 50.86% of TAP comments (see Table 6). Finally, S5's comments about confusing similar sounds (see Table 5) links to failure of phonic discrimination, which constitute 1.75% of the TAP comments (see Table 6).

Table 6

Student Comments During the TAP Relating to Comprehension Failures

Category of comment	Type of comment	No.	Example
Failure to understand	New word	121	"argument – this is a new word for me"
	Long words are difficult	6	"long syllable words are difficult for me"
	Guess phrase/sentence meaning incorrectly	32	"Paying a fine for freedom"
	Comment on lack of knowledge	90	"I don't know the meaning of this word"
	Questioning word meaning	43	"what does demonstration mean"
	Guess word meaning incorrectly	13	"I think 'mall' means 'mile'"
	Incorrect translation into Arabic	15	"steal" means "steal" in Arabic
	Failure to understand phrase	5	"I don't understand the final segment"
	Failure to understand sentence	5	"I don't understand this sentence"
	Confusing of different words	2	Confusion of "public," "distance," and "space"
	Confusing similar spelling	2	"private," "protestors," "property"
	Confused meaning of phrase	3	"freedom" and "speeches" [freedom of speech]
Total		337	

Together with the specific comments about pronunciation difficulties in Table 1, phonological issues have been shown to underlie 90.98% (i.e., 84.43% from Table 6 and 6.5% from Table 1) of the comments made by students about their reading difficulties.

Findings from the Student Interviews

One of the interview questions specifically asked students about how they first learned English letters in school. All students said that they first learned the names of English letters and not their sounds. Four said that this failed to establish a good foundation for English reading and a further five added that it impacted negatively on their reading comprehension. Despite all agreeing that knowing English phonics and phonic patterns from the very beginning would have improved their reading comprehension, three said they had only learned some of them at university. Eleven of the 16 students had also never been taught the pronunciation of stable final syllables (such as -tion), despite three believing that it reduced their reading comprehension by up to 25% and agreeing that such knowledge would improve pronunciation.

Lack of phonic awareness, especially of how to pronounce vowels, silent letters and compound letters interfered with students' abilities to both spell and recognize English words. Fourteen students attempted to compensate for this lack by employing phonological reading strategies, such as sounding out syllables separately or re-reading words in an attempt to clarify their meaning. Ten of the 16 students identified pronunciation failures as one of the most difficult aspects of reading English text and a further five added new and long words, which have been shown to be linked to pronunciation deficits. Only one student did not mention phonics or phonetic-based problems as a major difficulty.

Findings from the Lecturer Interviews

Findings from the lecturer interviews strongly supported student interview findings. All six lecturers agreed that schools taught English letter names rather than their sounds and

two added that, as a result, students often mispronounce words they are trying to read. Although they all agreed that learning phonics from an early stage of reading education is vital, one lecturer in particular attributed this shortcoming to "teachers missing the connection between phonics and reading comprehension". Two lecturers mentioned the opaqueness of English grapheme/phoneme correspondence as a major contributing factor.

Two lecturers also noted that the struggle to pronounce English words constituted a major reading difficulty for their students. Most agreed that students simply omitted text they found difficult (the relationship between difficulty and pronunciation has been established beforehand) which suggests that poor pronunciation has a large impact on reading and comprehension. Three lecturers said that better phonic awareness would improve reading comprehension, and added that it was the responsibility of schools to undertake this from the beginning of teaching English reading.

Discussion

Findings support Ehri's (1995) phase model of reading development and suggest that letter-name-first instruction may impede progression through developmental phases. Participants demonstrated characteristics of partial alphabetic phase readers, using letter names as cues, rather than full alphabetic phase readers who employ complete grapheme-phoneme connections. Ehri’s (1995) theoretical framework helps explain why early instructional choices have lasting effects: learners who do not develop full alphabetic knowledge cannot progress to consolidated alphabetic phase, limiting reading fluency and comprehension.

Most importantly, the interview results show that these students have little or no training in English phonics beyond the teaching of letter names in schools. This is a significant failing in the way that English is taught in Saudi Arabia and could be the case for the teaching of EFL reading in other countries.

The teaching of English phonics is far from simple and lecturer participants identified the widely-recognized opaqueness of English grapheme/phoneme correspondence as a contributing factor to poor Saudi EFL reading ability as students are not given the opportunity to develop English phonic awareness. In many international studies, phonemic awareness has been demonstrated to be an essential part of developing reading skills, particularly where letter/sound correspondences are not obvious (Timmer & Schiller, 2012) and where the relationships between them are inconsistent (Wimmer & Hummer, 1990).

The findings of this study also showed that students did their best to remedy their deficits by attempting to transfer L1 knowledge into EFL reading. However, this often failed because of differences between the two languages, as identified by Saigh and Schmitt (2012). For example, students in this study mispronounced English consonants which lacked Arabic parallels (e.g., "p" and "v"). Where such differences exist, Saigh and Schmitt clearly state that English norms need to be learned and consistently applied. This is currently not being undertaken in Saudi schools and may also be the case in other contexts.

Saigh and Schmitt (2012) have identified the phenomenon of "vowel blindness" in Arabic EFL learners, and lack of awareness of English vowel pronunciation interfered with participants' abilities to both spell and recognize English words. Vowels were often pronounced by their letter names, particularly when the phoneme was very different from the letter name (e.g., "u" in "upset"). Vowels were also pronounced in their long form (e.g., "a" in "private" and "i" in "illegally") which is also closer to their letter name than to its short form. These mispronunciations are a direct outcome of the teaching of English letters by name rather than phoneme in Saudi schools and have implications for teaching in other EFL contexts (Saigh & Schmitt, 2012).

Whereas phonic awareness can be acquired without specific instruction in a first language, in the L2 context, it must be deliberately taught. This will be especially important

in an EFL context where access to spoken English does not precede English teaching and where such access continues to be limited. However, students in this study stated they had never been taught pronunciation strategies in school. According to research findings, such teaching of phonic awareness would improve many L2 language skills in both the short and long term (Herrera, 2023; Johnson & Tweedie, 2010; Zhang et al., 2023). Improvements in EFL reading ability would be one of these.

Castles et al. (2009) found that the links between English letters and their sounds need to be taught, and some studies suggest that knowing letter names facilitates the development of reading (De Jong & Olson, 2004; Foulin, 2005; Vazeux et al., 2020). However, other researchers found that this depended on the structure of the letter and teaching letter names before phonic qualities is actually harmful to reading development (Alzahrani & Algethami, 2023; Cardoso-Martins et al., 2011; Levin et al., 2006). The findings of this study support the findings of the latter group of studies and suggest that the teaching of letter names should not precede the teaching of their sounds.

So, when should the teaching of English letter sounds take place? Vadasy and Sanders (2021) suggest that phonemic awareness needs to be taught as soon as possible before students begin to read. This suggests that the sounds of English letters should be taught from the very beginning of EFL instruction. In which case, when should letter names be taught? This research suggests that letter sounds and names should not be taught together as this would both increase cognitive load, and confuse the learner. Rather, English letter names should follow the teaching of their phonics in EFL reading instruction.

The responsibility for this change rests, not only with EFL teachers, who themselves often experience serious phonological shortcomings (quoted from a lecturer participant in this study) but also with their trainers (Al-Sukaiti, 2023).

This study has several limitations. Most notably, the small sample size limits the generalizability of the findings. Future studies should employ stratified random sampling, include female participants, and recruit across diverse institutional settings to enhance representativeness. This study's retrospective design limits causal inference. Participants' reports of receiving letter-name-first instruction in schools rely on memory and may be incomplete or inaccurate. The absence of a comparison group of students who received letter-sound-first instruction limits the ability to definitively attribute observed reading difficulties to letter-name-first instruction.

Future studies should try to conduct randomized controlled trials comparing letter-name-first versus letter-sound-first instruction with adult Arabic EFL learners. They should also investigate whether phonological awareness deficits from letter-name-first instruction can be remediated in adult learners, and include female participants and participants from different cultural backgrounds.

Conclusion and Recommendations

A significant body of research has shown that phonological awareness is vital to language development. The teaching of such awareness has been demonstrated to be effective in both the L1 and L2 contexts and is particularly essential in the teaching of phonologically opaque languages such as English in which there is low grapheme/phoneme correspondence and high inconsistency. This is even more the case when the EFL student comes from an L1 environment where such correspondence is more direct.

Results showed that students were taught English letters by name in schools and only learned some basic phonics as undergraduate students. This lack of phonic awareness identified was a dominant theme contributing to subsequent reading comprehension failure.

It is therefore logical to conclude that EFL reading instruction could be improved by first teaching English letters phonically, thereby establishing a sound foundation on which to build English reading skills. Teaching letter names should be delayed until this foundation is in place. In Saudi Arabia and in the wider EFL context, this would require making teachers more aware of the importance of phonology, and training them in both the knowledge and techniques necessary to promote phonological expertise.

To implement this instructional shift effectively, teacher training programs should incorporate several interrelated components that collectively build teachers' phonological, pedagogical, and practical competencies. First, teachers require a solid foundation in phonological knowledge, including mastery of the 44 English phonemes, an understanding of grapheme–phoneme correspondence patterns, and awareness of phonological features that are particularly challenging for Arabic-speaking learners. This knowledge base underpins accurate instruction and enables teachers to anticipate and address common learner difficulties.

Second, training should emphasize evidence-based pedagogical methods, particularly systematic synthetic phonics, phonemic awareness activities, and decoding strategies. Within this framework, priority should be given to teaching letter sounds before letter names, as this sequencing supports more efficient decoding development. Third, teacher preparation should extend to curriculum development, equipping educators with the skills to design phonics-first lesson sequences, adapt existing instructional materials, and construct valid and reliable assessment tools aligned with phonics instruction.

In addition, effective classroom implementation requires structured support mechanisms, including in-class coaching, demonstration lessons, and practical strategies for integrating phonics instruction within communicative language teaching contexts. Finally, sustained professional growth depends on collaborative support structures, such as professional learning communities that facilitate peer observation, joint lesson planning, and reflective

practice. With systematic training and ongoing institutional support, this integrated approach can address the persistent literacy challenges identified in this study and provide EFL learners with a robust phonological foundation for reading development.

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References

Abu Ahmad, H., & Share, D. L. (2025). Beginning reading instruction: Syllables or phonemes? An experimental training study with Arabic-speaking preliterate preschoolers. *Developmental Psychology, 61*(7), 1325–1341. https://doi.org/10.1037/dev0001855

Alderson, J. C., & Urquhart, A. H. (1992). *Reading in a foreign language* (5th ed.). Longman.

Al-Sukaiti, N. (2023). Measuring the impact of synthetic phonics teaching on the acquisition of upper and lowercase recognition skills: Evidence from Oman. *Research Highlights in Language, Literature and Education* (Vol. 4, pp. 162–185). BP International. https://doi.org/10.9734/bpi/rhlle/v4/9826F

Alzahrani, A., & Algethami, G. (2023). Phonological awareness and word reading fluency among young Saudi learners of English. *International Journal of Language and Literary Studies*, *5*(1), 14–27. https://doi.org/10.36892/ijlls.v5i1.1183

Bernhardt, E. B. (2005). Progress and procrastination in second language reading. *Annual Review of Applied Linguistics, 25*, 133-150. https://doi.org/10.1017/S0267190505000073

Bowey, J. A. (2005). Predicting individual differences in learning to read. In M. J. Snowling & C. Hulme (Eds.), *The science of reading: A handbook* (pp. 155–172). Blackwell Publishing. https://doi.org/10.1002/9780470757642.ch9

Cardoso-Martins, C., Mesquita, T. C. L., & Ehri, L. (2011). Letter names and phonological awareness help children to learn letter–sound relations. *Journal of Experimental Child Psychology, 109*(1), 25–38. https://doi.org/10.1016/j.jecp.2010.12.006

Castles, A., Coltheart, M., Wilson, K., Valpied, J., & Wedgwood, J. (2009). The genesis of reading ability: What helps children learn letter–sound correspondences? *Journal of*

Experimental Child Psychology, 104, 68–88. https://doi.org/10.1016/j.jecp.2008.12.003

Cohen, L., Manion, L., & Morrison, K. (2000). *Research methods in education* (5th ed.). Routledge. https://doi.org/10.4324/9780203224342

Connelly, V. (2002). Graphophonemic awareness in adults after instruction in phonic generalizations. *Learning and Instruction, 12*, 627–649. https://doi.org/10.1016/S0959-4752(01)00034-2

De Jong, P. F., & Olson, R. K. (2004). Early predictors of letter knowledge. *Journal of Experimental Child Psychology, 88*, 254–273. https://doi.org/10.1016/j.jecp.2004.03.007

Ehri, L. C. (1995). Phases of development in learning to read words by sight. *Journal of Research in Reading, 18*(2), 116–125. https://doi.org/10.1111/j.1467-9817.1995.tb00077.x

Ehri, L. C. (2022). What teachers need to know and do to teach letter–sounds, phonemic awareness, word reading, and phonics. *The Reading Teacher*, *76*(1), 53-61. https://doi.org/10.1002/trtr.2095

Ellefson, M. R., Treiman, R., & Kessler, B. (2009). Learning to label letters by sounds or names: A comparison of England and the United States. *Journal of Experimental Child Psychology, 102*(3), 323–341. https://doi.org/10.1016/j.jecp.2008.05.008

Ericsson, K., & Simon, H. (1993). *Protocol analysis: Verbal reports as data* (2nd ed.). MIT Press. https://doi.org/10.7551/mitpress/5657.001.0001

Evans, M. A., Bell, M., Shaw, D., Moretti, S., & Page, J. (2006). Letter names, letter sounds and phonological awareness: An examination of kindergarten children across letters

and of letters across children. *Reading and Writing, 19*, 959–989. https://doi.org/10.1007/s11145-006-9026-x

Færch, C., & Kasper, G. (1987). *Introspection in second language research*. Multilingual Matters.

Farran, L. K., Bingham, G. E., & Matthews, M. W. (2012). The relationship between language and reading in bilingual English-Arabic children. *Reading and Writing*, *25*(9), 2153-2181. https://doi.org/10.1007/s11145-011-9352-5

Foulin, J. N. (2005). Why is letter–name knowledge such a good predictor of learning to read? *Reading and Writing*: *An Interdisciplinary Journal, 18*, 129–155. https://doi.org/10.1007/s11145-004-5892-2

Grix, J. (2018). *The foundations of research*. Bloomsbury Publishing. https://digital.casalini.it/9781352002010

Hamada, M., & Koda, K. (2011). Similarity and difference in learning L2 word-form. *System, 39*, 500-509. https://doi.org/10.1016/j.system.2011.10.011

Henderson, R. (2011). Doing qualitative research: a practical handbook. *Studies in Continuing Education*, *33*(3), 372–374. https://doi.org/10.1080/0158037X.2011.609670

Herrera, E. M. (2023). Achieving reading skills in a group of EFL Ecuadorian children through English phonics. *Research, Society and Development*, *12*(5), e26512541906. https://doi.org/10.33448/rsd-v12i5.41906

Hulme, C., Bowyer-Crane, C., Carroll, J. M., Duff, F. J., & Snowling, M. J. (2012). The causal role of phoneme awareness and letter-sound knowledge in learning to read: Combining intervention studies with mediation analyses. *Psychological Science*, *23*(6), 572-577. https://doi.org/10.1177/0956797611435921

Hulme, C., Caravolas, M., Malkova, G., & Brigstocke, S. (2005). Phoneme isolation ability is not simply a consequence of letter-sound knowledge. *Cognition, 97*, 1–11. https://doi.org/10.1016/j.cognition.2005.01.002

Huo, S., & Wang, S. (2017). The effectiveness of phonological-based instruction in English as a foreign language students at primary school level: A research synthesis. *Frontiers in Education, 2*. https://doi.org/10.3389/feduc.2017.00015

Ibrahim, M. (2018). Explicit versus implicit modes of EFL reading literacy instruction: Using phonological awareness with adult Arab learners. *English Language Teaching, 11*(9), 144-154. https://doi.org/10.5539/elt.v11n9p144

Johnson, R. C., & Tweedie, G. M. (2010). Could phonemic awareness instruction be (part of) the answer for young EFL learners? A report on the early literacy project in Malaysia. *TESOL Quarterly, 44*(4), 822-829. http://www.jstor.org/stable/27896769

Lee, C. H. (2009). Testing the role of phonology in reading: Focus on sentence processing. *Journal of Psycholinguistic Research*, *38*(4), 333-344. https://doi.org/10.1007/s10936-008-9092-0

Levin, I., Shatil-Carmon, S., & Asif-Rave, O. (2006). Learning of letter names and sounds and their contribution to word recognition. *Journal of Experimental Child Psychology, 93*, 139–165. https://doi.org/10.1016/j.jecp.2005.08.002

Melby-Lervåg, M., Lyster, S. A. H., & Hulme, C. (2012). Phonological skills and their role in learning to read: A meta-analytic review. *Psychological Bulletin*, *138*, 322–352. https://doi.org/10.1037/a0026744

Mourtaga, K. R. (2006). Some reading problems of Arab EFL students. *Al-Aqsa University Journal (Humanities Series)*, *10*(2), 75-91. https://www.alaqsa.edu.ps/site_resources/aqsa_magazine/files/122.pdf

Piasta, S. B., & Wagner, R. K. (2010). Developing early literacy skills: A meta-analysis of alphabet learning and instruction. *Reading Research Quarterly*, *45*(1), 8-38. https://doi.org/10.1598/RRQ.45.1.2

Rankin, J. M. (1988). Designing thinking-aloud studies in ESL reading. *Reading in a Foreign Language, 4*(2), 119-132. https://scholarspace.manoa.hawaii.edu/server/api/core/bitstreams/29171823-88c3-45ba-8d47-d8b5221a904e/content

Ryan, A., & Meara, P. (1991). The case of the invisible vowels: Arabic speakers reading English words. *Reading in a Foreign Language*, *7*(2), 531-540. https://scholarspace.manoa.hawaii.edu/server/api/core/bitstreams/326481a8-173c-447f-b66d-ed64e1241143/content

Saigh, K., & Schmitt, N. (2012). Difficulties with vocabulary word form: The case of Arabic ESL learners. *System, 40*, 24-36. https://doi.org/10.1016/j.system.2012.01.005

Share, D. L. (2004). Knowing letter names and learning letter sounds: A causal connection. *Journal of Experimental Child Psychology*, *88*, 213–223. https://doi.org/10.1016/j.jecp.2004.03.005

Simon, G., Bernard, C., Lalonde, R., & Rebaï, M. (2006). Orthographic transparency and grapheme–phoneme conversion: An ERP study in Arabic and French readers. *Brain Research*, *1104*(1), 141-152. https://doi.org/10.1016/j.brainres.2006.05.071

Timmer, K., & Schiller, N. O. (2012). The role of orthography and phonology in English: An ERP study on first and second language reading aloud. *Brain Research, 1483*, 39–53. https://doi.org/10.1016/j.brainres.2012.09.004

Treiman, R., Pennington, B. F., Shriberg, L. D., & Boada, R. (2008). Which children benefit from letter names in learning letter sounds? *Cognition*, *106*(3), 1322-1338. https://doi.org/10.1016/j.cognition.2007.06.006

Vadasy, P. F., & Sanders, E. A. (2021). Introducing grapheme-phoneme correspondences (GPCs): Exploring rate and complexity in phonics instruction for kindergarteners with limited literacy skills. *Reading and Writing*, *34*(1), 109-138. https://doi.org/10.1007/s11145-020-10064-y

Vazeux, M., Doignon-Camus, N., Bosse, M. L., Mahé, G., Guo, T., & Zagar, D. (2020). Syllable-first rather than letter-first to improve phonemic awareness. *Scientific Reports*, *10*(1), Article 22130. https://doi.org/10.1038/s41598-020-79240-y

Waked, A. N., Yassin, M., Ahmad, R., & Pilotti, M. A. E. (2024). Phonological awareness of novel phonemes and English-language reading comprehension in EFL university students. In *10th International Conference on Higher Education Advances* (HEAd'24). Editorial Universitat Politècnica de València. https://doi.org/10.4995/HEAd24.2024.17092

Whitney, P., & Budd, D. (1996). Think-aloud protocols and the study of comprehension. *Discourse Processes*, *21*(3), 341–351. https://doi.org/10.1080/01638539609544962

Wimmer, H., & Hummer, P. (1990). How German-speaking first graders read and spell: Doubts on the importance of the logographic stage. *Applied Psycholinguistics*, *11*(4), 349–368. https://doi.org/10.1017/S0142716400009620

Zhang, X., Xu, H., Zhang, H., Sun, J., Wang, C., & Pei, Z. (2023). Early reading profiles of L2 English learners: How orthographic knowledge predicts reading

comprehension. *Journal of Cognitive Psychology*, *35*(8), 795–811.

https://doi.org/10.1080/20445911.2023.2247610