

The role of phonological awareness in developing English reading skills in EFL students

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Abstract

The objective of this study is to investigate the role of phonological awareness in reading comprehension skills in intermediate EFL college students. Twenty-five 3rd year college students in the English Department, Faculty of Arts, Mansoura University were selected by convenience to participate in the experimental group, and twenty-six others were assigned to the control group. An experimental method of research was adopted for this study, involving a posttest-only control group design. Two instruments were developed, standardised, and administered in this study: namely, The Chafouleas' Phonological Awareness Tasks Assessment and a reading comprehension test. The PA assessment included five tasks, i.e., rhyme-providing, sound-providing, blending, segmentation, initial-final deletions. The measures were given over five days by the end of the 2019-second semester. Procedures included giving a phonics development programme over the semester to the experimental group as they studied reading. Results showed that the phonics intervention yielded positive results in increasing phonological awareness in the experimental participants, which, in turn, positively affected their reading comprehension achievement. Further, the PA results correlated more positively with reading comprehension. Recommendations for pedagogy and further research suggestions were forwarded in the end.

Keywords: Phonological awareness (PA); Reading skills; EFL college students; phonological assessment battery

Introduction

Literature reviews and syntheses of research clearly show that phonological awareness (PA) is instrumental to the acquisition and development of reading comprehension skills in the case of first languages, but this observation is not well acknowledged in foreign language learning contexts (Makhoul, 2017; Sodoro, Allinder and Rankin-Erickson, 2002; Vloedgraven & Verhoeven, 2007). Phonological awareness has also been shown to predict reading comprehension in different languages (Ehri; Nunes; Willows; Schuster; Yaghoub-Zadeh; 2001; Ftika, 2013; Jafari & Rad, 2016; Lee, 2011; Makhoul, 2017). By definition, phonological awareness refers to our conscious skills to detect and manipulate the sounds and sound structures of human language at the levels of (1) syllables, (2) onsets and rimes and (3) phonemes (Lieberman and Shankweiler, 1985; Sodoro et al., 2002). These skills are

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metalinguistic skills that distinguish strong readers from poor readers (Lieberman, Shankweiler, & Liberman, 1989).

Extant research indicates that training language learners on phonological awareness can be conducive to the development and improvement in reading and spelling skills, and so is explicit literacy instruction (Bus & Van Ijzendoorn, 1999; Kurtz, 2010; Troia, 1999). Experimental research in explicit training on phonological research also revealed improved reading performance in children who received such PA training interventions, but that was mostly in the case of first languages (Ball and Blachman, 1991; Brown and Felton, 1990; Felton, 1993; Sodoro et al., 2002). These findings being thus ascertained, pedagogical implications, and recommendations from previous research indicate that teaching reading comprehension must include, in part, explicit training in phonological awareness (Ehri, 2004; Makhoul, 2017).

The problem of the Study

There is little, if any, research on the role of phonological awareness in developing reading skills in EFL college students. Most of the prior research studies were conducted in various first languages and with children populations, but there is paucity in research on the effects of phonological awareness training on improving foreign language reading skills in adult learners.

Objectives

Therefore, this study aims to explore the role of phonological awareness training in developing the reading skills of a sample of EFL college students in an Egyptian higher education setting. Therefore, this study seeks to recognise the correlations between phonological awareness and reading development in foreign language learners with a view to:

1. developing a phonological awareness training programme;
2. examining intermediate achievers' performance in PA after training;
3. exploring the correlation between phonological awareness and reading comprehension in EFL college students.

Literature review

Phonological awareness has been defined as "conscious access to the component sounds of speech within words and the ability to manipulate sounds" (Walton & Walton, 2002, pp. 79-80). In another oft-cited study by Stanovich (1992), the author argues that PA can be defined as the ability to explicitly and segmentally process sound elements

smaller than syllables - a definition almost tantamount in meaning to the concept of phonemic awareness proposed by Adams (1990). [Sensenbaugh \(1996\)](#) points out that phonemic awareness and phonological awareness were interchangeably used in pertinent literature though this is considered incorrect. Sensenbaugh further elaborates that phonological awareness (PA) refers to the awareness of lexemes having syllables, onsets and rhymes and phonemes; thus, phonological awareness is an umbrella concept including, inter alia, phonemic awareness.

According to Adams (1990), language learners should be able to connect their knowledge of phonemes to their knowledge of letters. Said otherwise, they need to be able to link their awareness of phonemes to the "corresponding graphic representations" of these letters ([Sensenbaugh, 1996, p. 3](#)), given that PA is a requirement for and an outcome of learning how to read ([Yopp, 1992; 1995](#)).

Subsumed within this definition is the fact that PA is an integral part of the phonological processing system in human language, which is crucial for decoding and encoding language signals, or in other words, is used for enabling speaking and supporting listening comprehension. Being a conscious process means that PA belongs to a category of language strategies known as metalinguistic skills. This category demands language learners to reflect consciously on the spoken structures of the target language ([Gillon, 2004; Høien, Lundberg, Stanovich, & Bjaalid, 1995; Wagner, Torgesen, & Rashotte, 1994; Vloedgraven & Verhoeven, 2007](#)).

Prior research on phonological awareness as related to reading skills has revealed that the poorer phonological awareness is, the poorer reading skills become in language learners ([Bradley & Bryant, 1983; Gillon, 2004; Catts & Kamhi, 2005; Kurtz, 2010; Stahl & Murray, 1994](#), to cite just a few). For example researchers demonstrated that weak readers have weak PA skills and are deficient in phonological processing as they are unable to distinguish the segmental and suprasegmental components of words, phrases and sentences including word stress, rhyme and phoneme structure ([Ashby, 2006; Blachman, 1994; Chen, 2013; Stanovich, 2000; Nagy, Berninger, Abbott, Vaughan, & Vermeulen, 2003; Whalley & Hansen, 2006; Wood, 2006](#)).

The extant body of research available on connections between PA and reading shows that PA is the integration of a variety of linguistic and metalinguistic skills. Nevertheless, cognitive- linguistic abilities such as sound discrimination, memory processing of sounds, attending to speech, and comprehending speech are also required for the development of PA. Therefore, listening comprehension skills can be integrated into explicit PA instruction and training ([Wagner, Torgesen, Laughon, Simmons &](#)

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Rashotte, 1993; Mattingly, 1972). Previous studies showed that shortage in PA, or phonological deficit, can be conducive to crucial problems in reading (Bradley & Bryant, 1983; Vellutino, Tunmer, Jaccard, & Chen, 2007).

Since the seminal work of Bryant and Bradley (1983) on the relationship between PA and reading, scholars started to develop models that describe how PA works, how, and when it affects L₁ or L₂ development of phonological competences. The most illustrated model is that by Adams (1990), which views that there are five levels of difficulty in acquiring or learning PA as implied from a longitudinal case study. The taxonomy model of PA proposed by Adams (1990) proposes that identifying similar rhymes is the most difficult PA task, then followed by grouping words/sentences by rhymes, the pronunciation of concordant sequences, differentiation between phonemes, and finally identifying words. Hatcher, Hulme, and Snowling (2004), based on Adam's model, further developed a teaching paradigm for PA. According to Kelly & Phillips (2016, pp. 48-49), these models view PA as instrumental to phonological processing and in the light of Adams' taxonomy, the PA skills that need to be stressed in teaching programmes are five categories of skills:

1. Knowledge of nursery rhymes
2. Knowledge of rhyme and alliteration;
3. Blending phonemes and syllable segmentation/spelling;
4. Phonemic segmentation;
5. Phoneme manipulation.

In this regard, Adams (1990) suggests that some PA skills are more predictive of reading ability than others; specifically, she points out that phonemic segmentation and phoneme manipulation could be stronger predictors of learning to read than knowledge of rhymes and syllable segmentation. She also proposes that these skills move in a progression of knowledge of nursery phonemes to the knowledge of rhymes and alliteration, phoneme blending, and syllable segmentation to phoneme manipulation. Some researchers further maintain that PA skills develop in a predictable sequence in the case of first language settings (Anthony & Francis, 2005; Kelly & Phillips, 2016).

Several research studies also reveal that there is a nexus between phonological awareness and reading achievement in first/second language acquisition/learning settings (e.g., Abu-Rabia 2007; Bradley & Bryant, 1983; Saiegh-Haddad, 2007; Wagner, 1988). Findings from this research

on the connections between phonological awareness and reading skills development uphold the views that suggest a mutual interconnection between PA and reading, now that PA and reading skills both facilitate and are facilitated by each other (Chafouleas, 1997; Perfetti, Beck, Bell, and Hughes, 1987; Pratt & Brady, 1988; Torgesen et al., 1994; Wagner et al., 1994). Evidentially, prior research indicates that phonological awareness is a predictor of reading achievement, and reciprocally, more developed phonological awareness is supported by reading achievement (Chafouleas, 1997; Perfetti et al., 1987; Wagner et al., 1994).

Besides, researchers suggest that interventions in PA development could contribute to the enhancement of reading performance (Bradley & Bryant, 1983; Cunningham, 1990; Elbro, 1996; Jafari & Rad, 2016). Training interventions that address improving PA at the sound level, i.e., phonemic awareness, can further help in improving spelling and reading skills in weak and intermediate level readers (Ehri, 2004; Fox and Routh 1984; Makhoul, 2017). Prior research implications for pedagogy suggested that these PA training interventions should be designed to incorporate listening and reading instruction, rhyming, alliteration, stress and prosody, which can best be integrated into song and rhyme patterns (Blachman, 2000; Kurtz, 2010).

Besides, extant literature further shows that PA involves the detection and manipulation of sounds at three sound levels: phonemics, syllables, and rhyme, the study of which has been well established in L₁ acquisition research. However, these suprasegmental features in PA, especially prosody, rhyming, and stress, are still underestimated in the case of foreign language instruction and adult language pedagogical research (Chen, 2013; Holliman, Wood, and Sheehy, 2012; Wood and Terrell, 1998). The nature of English as a stress language makes it essential to develop PA at syllabic levels, including onset-rhyme awareness and phonemic awareness (Chiappe & Siegel, 2006; McBride-Chang, Tong, Shu, Wong, Leung & Tardif, 2008). In the case of Arabic, which is a pitch-accent language, it is most likely possible that the transfer of learning or training can be useful for Arabic-speaking students (Egyptians included) to learn about PA in English. There is emerging research evidence demonstrating that phonemic awareness could be significantly related to reading in Arabic (Abu-Ahmad, Ibrahim & Share, 2014; Abu-Rabia, 2007; Al Ghanem & Kearns, 2015; Makhoul, 2017).

There is also emerging research evidence showing that PA in the first language could be transferred to the second language PA and both are significantly correlated; therefore, L₁ PA can predict L₂ PA in determining reading performance in the target language (Bruck & Genesee, 1995; Yeung & Ganotice, 2013; Lindsey, Manis, & Bailey,

2003). However, research on the reciprocal cross-linguistic transfer of PA is still nebulous. There are few undocumented views suggesting that PA at the level of phonemes or suprasegmentals may transfer across languages learned by students with different native language alphabets (Yeung & Ganotice, 2014). Even though, without the transfer of learning, a little amount of PA sensitivity is yet required to initiate PA training in the target language. Yeung and Ganotice (2013) aptly hypothesize that:

The demonstrated bi-directional cross-language transfers of phonological awareness at specific linguistic levels partially support the idea that general phonological sensitivity is necessary for beginning reading acquisition. (p. 333)

Some studies also indicate that PA contributes to reading fluency (Chen, 2013). Reading fluency involves the fulfilment of reading tasks while keeping a normal native-like speech rate with correct prosody (Chen, 2013; Hudson, 2002; Lovett, 2017). Even though PA contributes to reading fluency, accuracy, rather than fluency, is what matters in the case of PA development and PA assessment (Stanovich et al., 1984; Yopp, 1988). Research in foreign language settings on PA, meagre as it is, shows that speed of reading or reading rate is an essential factor of assessing PA, but the accuracy of letter-sound correspondence is instrumental both for enhancing reading speed and developing PA skills, which finally contributes to better reading in English (Aro & Wiimmer, 2003; Yeung & Ganotice, 2013).

Methodology

Twenty-five EFL third-year college students, identified by their freshman and sophomore reading course grades as intermediate achievers, were selected for participating in this study by convenience. Twenty-six others were randomly selected for the control group. To avert instructor-related variables, the researcher taught the experimental and control groups.

Instruments

1. The Chafouleas' Phonological Awareness Tasks Assessment

This is a phonological awareness assessment battery made up of five PA tasks. All tasks are scorable based on the aggregate of right answers, described below:

- 1. Rhyme-providing:* a task to measure the participants' ability to provide a rhyming word when prompted with a target word. Participants were given target prompts orally by the researcher

to be responded with a word of the same rhyming sound. These were monosyllabic words (e.g., mat; hat; rat). If students provided non-word forms (e.g., lat; shat) rhyming the same as the target words (e.g., mat; sat), their responses were dealt with as correct.

2. *Sound-providing*: a sound isolation task where participants were orally prompted to say the initial sound of the words they heard.
3. *Blending*: a task that requires participants to combine two or more phonemes said in isolation.
4. *Segmentation*: a task in which the participants were asked to break down words into individual phonemes, such as saying the constituent sounds of the word pen - p, e, n.
5. *Initial deletion*: a task in which the participants were required to take away the initial sound of a word.

2. *The Phonological Awareness Training Programme*

This intervention was developed and presented to the experimental group as supplementary material to an intermediate reading course for EFL students in the English department. The researcher designed the training programme. PA training involved a 15-minute instruction in phonics by the end of two sessions a week in a third-year reading comprehension course with the purpose of increasing phonological awareness and enhanced PA skills. The course lasted for one semester. The phonics activities included Rainbow hop letter sounds games, Alphabet phonics clip cards, Letter sounds magnet boards, Phonic photo scavenger hunt, Spin & rhyme, Erase the sound, Mystery bags, 4 in a row, KABOOM alphabet, Say two words, Monster names, Smack the letters, Spy discovery bottle. These activities were developed from different websites and phonics books to help learners decode words, pronounce them, and identify their meanings with some amusement.

3. *Reading Comprehension Test*

This test was developed to measure the participants' reading comprehension skills. The test consists of three reading passages, one long and the two others being short texts. The long text belongs to a narrative genre, excerpted from a novel, *Great Expectations*, by Charles Dickens, as a compact, self-contained meaningful excerpt. The other two texts were expository in nature, with all three texts carefully selected to be readable for the participants in both groups of the study. The validity of the test was determined by sending a draft version of the test to five instructors in reading in the English department to check the test for appropriateness of content and form, as well as the level of readability and difficulty. Written comments were considered upon revising the test.

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Using the Kuder-Richardson-20 reliability formula, the reliability coefficient of the test was calculated to be .83, which is a fairly high-reliability coefficient.

Procedure

For the experimental group, participants were given a 15-minute extracurricular training in phonics for the purpose of increasing their phonological awareness. The phonics training programme was given as supplementary material to the third year English department reading comprehension course. The control group studied the reading comprehension course, but were not given any explicit training in phonics. By the end of the semester, a panel of five examiners, including the researcher, collaborated to administer the Chafouleas' Phonological Awareness Tasks Assessment Battery, which they were trained on. Testing on the PA battery lasted for five days. Examiners read out the PA assessment directions for each task, and gave practice examples before the administration to avoid misunderstandings or confusion on the part of the participants. The PA assessments were given for both the experimental and control participants. In one testing session, the experimental and control participants were administered the reading comprehension test afterwards.

Results

To explore differences in the performance of the experimental group participants and their counterparts in the control group in terms of phonological awareness tasks, a t-test for independent samples was run using SPSS Statistics 21.0 for IBM.

Table 1:

Development of phonological awareness skills in both the experimental and control groups on post-testing

Measure	Experimental group		Control group		t-value	Effect size (r)
	M	SD	M	SD		
Rhyme providing	77.67	25.34	67.88	23.05	-1.59*	.09
Sound providing	75.45	28.19	67.23	21.44	1.88***	-.88
Blending	88.11	23.88	49.87	33.12	11.89***	-.58
Segmentation	97.33	18.17	77.02	23.45	6.59***	-.27
Initial deletion	95.03	13.23	24.76	28.90	10.07***	-.49
Overall mean score	79.48	13.38	61.07	18.09	11.77***	-.44

* $p < .05$ *** $p < .001$

As it appears from Table 1, a significant improvement in phonological awareness was detected in the mean scores of the experimental group participants (M=79.48; SD=13.38) , as compared with the mean scores of the control group participants , (M=61.07. SD=18.09), upon post-testing after the phonological awareness training intervention was given, where (t=11.77, p < 0.001).

Improvement in the skills of phonological awareness was noted across the different five tasks of PA, including rhyme providing (M=77.67, SD=25.34) for the experimental group, and (M=67.88, SD=23.05), where the *t* value for this subtest was -1.59, p< 0.05. The *t* values for the other tasks of sound providing, blending, segmentation, and initial deletion were 1.88, 11.89, 6.59, and 10.07 respectively at a significance alpha greater than 0.001.

To further explore the differences between the experimental and control group participants' performance on the reading comprehension test, another *t*-test for independent samples was computed. Significant differences were observed on the three scores of the three reading comprehension texts that make up the RC test. Table 2 summarises these findings:

Table 2

Experimental and control group reading mean scores and standard deviation, t-test value

Group	First reading text		Second reading text		Third reading text		Overall reading score		t-value
	M	SD	M	SD	M	SD	M	SD	
Ex	88.9	24.7	81.77	27.1	65.9	30.2	77.2	25.8	5.67*
Ctrl	44.5	38.8	54.6	37.01	28.8	35.4	33.6	45.8	

**p < .001*

To compute the correlation between phonological awareness and reading comprehension, a Pearson product-moment correlation coefficient was calculated for the overall mean scores of PA and reading comprehension assessments. An average positive correlation was detected between phonological awareness and reading comprehension for the experimental group (r = .77, p .01). This finding indicates that there is a moderate positive correlation between phonological awareness in EFL college students and their performance on reading comprehension assessment.

Discussion

This study was insinuated by the researcher's motivation to fill a gap in research on phonological awareness as related to reading comprehension skills in EFL contexts. The study hypothetically proposed

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that phonological awareness can be taught, and it can induce better reading development, a hypothesis well supported in the literature available on phonological awareness in first language research settings (Adams, 1990; Anthony & Francis, 2005; Ashby, 2006; Bradley & Bryant, 1983; Blachman, 1997).

The rationale underpinning this study is that there is little research evidence in foreign language learning settings as productive as it is in first and second language settings to show the contribution of PA to reading skills development (Abu-Rabia 2000; Chafouleas, 1997; Ehri, 2004; Makhoul, 2017; Perfetti et al., 1987; Wagner et al., 1994). Therefore, this study came to examine the effect of training on PA in increasing phonological awareness in EFL college students and to explore the correlation between phonological awareness and reading comprehension. For achieving this research purpose, the researcher developed a phonics programme designed to focus on phonological awareness skills using games and other amusement activities that address the five components of PA as defined by Adams (1990) and other researchers (Hatcher et al., 2004; Kelly & Phillips, 2016). A reading comprehension test was also developed and standardised.

The findings of the present investigation revealed a statistically significant contribution to using a PA training intervention programme for promoting phonological awareness in EFL intermediate college students as compared to their peers in the control group. This finding is consistent with previous research findings about English having been taught in L1 and L2 contexts (Bradley & Bryant, 1983; Mattingly, 1972; Perfetti et al., 1987; Vellutino, et al., 2007; Wagner, et al., 1993; Wagner, et al., 1994). The findings also confirm the results of previous research that using interventions for enhancing PA in foreign languages could also induce enhanced reading skills, congruently concurring with prior research (Abu-Rabia, 2007; Al Ghanem & Kearns, 2015; Blachman, 2000; Bradley & Bryant, 1983; Cunningham, 1990; Elbro, 1996; Jafari & Rad, 2016; Yeung & Ganotice, 2013; Kurtz, 2010; Makhoul, 2017).

Conclusion

In conclusion, findings from this study ascertain the importance of phonological awareness, the role of phonological awareness in reading, and the connections between phonological awareness and reading comprehension in contexts where English is learned as a foreign language. Despite the optimistic aspect of the findings of this study, as confirming prior research findings in terms of the linkage between PA and reading skills, caution should be considered concerning the

generalizability of these findings to other EFL student populations. First, previous research pointed out that there is a strong positive correlation between PA and reading (e.g., Stanovich et al., 1984; Yopp, 1988; Makhoul, 2017), most of these research studies used different assessment batteries. Besides, across these different types of test batteries, the PA tasks were variously designed to evaluate distinct skill areas in the phonological assessment.

Furthermore, these tests emphasized accuracy rather than fluency in their assessment of phonological awareness. This suggests that scholars of phonology, pedagogy, and language acquisition need to develop a robust model or theory like Adam's (1990) or a psycholinguistic grain size theory (Ziegler & Goswami, 2005). This model should address the role of phonological awareness in first, second, and foreign language reading development.

Finally, a delimitation that overshadows the present study is lack of control over the demographic features of the participants, their language aptitudes and proficiency levels, and the volume and quality of classroom instruction that took place for the experimental and control groups. Even though the researcher worked as the instructor for both groups, still, the greatest delimitation had to do with limited control over classroom instruction and training, as well as on the demographic and language proficiency backgrounds of the participants. This warrants the possibility that with different samples, various findings could have been gleaned. Demographic factors and language backgrounds cannot be perfectly controlled. However, the researcher sought to keep these factors almost homogeneous with all participants in the research groups before the experiment.

Finally, about the pedagogical implications of this research, it unfolds clearly that in foreign language learning contexts, phonological awareness training can promote reading comprehension. In cases of languages with different orthographies, like Arabic and English, phonological training can be beneficial for EFL students, even adult ones.

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**Appendices
Appendix 1**

The Chafouleas' Phonological Awareness Tasks Assessment

Directions for Phonological Awareness Tasks

1. Administer tasks in the order presented.
2. Read the directions presented at the top of each task to the student before beginning administration.
3. Correct all practice trial responses that are incorrect, but do not respond on remaining items. See each task for examples of how to correct.
4. If the student asks for help during test items, encourage the student to try, and do the best that he/she can. If the student correctly answers both practice trials, move on to the test items. If not, you must administer a third practice item.
5. Score as incorrect any mispronunciations or omissions. Self-corrections and additions are not counted as errors. (Do not score as incorrect any pronunciations which may be attributed to dialect and/or speech difficulties.)
6. Be sure to provide the next item, using a clear voice, as soon as the student is finished with the previous item.
7. If the student fails to make any response (sound) within 5 seconds, provide the next item and score the previous as incorrect.
8. Continue providing items to the student until all items have been administered.
9. Praise the student upon completion of the task!
10. Be sure to completely score each task at the end of the session.

Participant Number : _____ Form 1

Rhyme - Providing

Examiner: "Listen to these words: fish - dish. Both of these words end with an -ish sound, they rhyme. Now, I'm going to say a word, and I want you to make up another word that has a rhyming sound just like it. Your word can be a real word or a pretend word."

Practice Trial 1: cat _____

If incorrect, say "Cat ends with an -at sound. Another word that ends with -at is hat. Cat-hat."

Practice Trial 2: lamb _____

If incorrect, say "Lamb ends with an -an sound. Another word that ends with -an is Sam. Lamb-Sam."

* Practice Trial 3: fur _____

If incorrect, say "Fur ends with an -ur sound. Another word that ends with -er is her. Fur-her."

1. say -----
3. saw -----

2. Me -----
4. Can -----

- 5. beat -----
- 7. nice -----
- 9. fast -----
- 6. Cage -----
- 8. Sand -----
- 10. Happy -----

Incorrect Responses: _____

Correct Responses: _____

Scoring: Non-word rhyming equivalents are scored as correct. Place a mark (Y or N) on each blank depending on the child's response. Record the total number of incorrect and correct responses.

Participant Number: _____

Form 1

Sound-Providing

Examiner: "I'm going to say a word, and you tell me what sound the word starts with. Let's try one for practice: Jack. Jack starts with /j/. Now you try one." (If the student gives the name of a letter instead of a sound, say "That's a letter. Can you tell me the sound Jack starts with?" Do not ask for the sound of the letter "j".)

Repeat the following directions: "What sound does start with?"

Practice trial 1: read

If incorrect, say, "Read starts with the r sound. Read."

Practice trial 2: tear

If incorrect, say "Tear starts with the t sound. Tear. "

* Practice trial 3: at

If incorrect, say "At starts with the a sound, at."

- 1. zoo /z/ -----
- 3. has /h/ -----
- 5. throw /th/ -----
- 7. last /l/ -----
- 9. flag /f/ -----
- 2. be /b/ -----
- 4. game /g/ -----
- 6. blue /b/ -----
- 8. dance /d/ -----
- 10. Trot /t/ -----

Incorrect Responses: _____

Correct Responses: _____

Scoring: Place a mark (Y or N) on each blank according to the student's response. Record the total number of incorrect and correct responses.

Participant Number: _____

Form 1

Blending

Examiner: "I'm going to say some sounds that will make a word, and you have to figure out what word I am trying to say. I want you to tell me the word the right way. For example, if I said /h/ /a/ /t/, I am trying to say hat.

Let's practice."

(Be sure to speak the segments in isolation, with an interval of approximately 1 second between sounds.)

Practice Trial 1 : /h/ /ai/ /r/ _____

If incorrect, say "h" "ai" "r" . When you put these sounds together, they make the word Hair, /h ai r/ "Hair".

Practice Trial 2: /g/ /o/ /t/ _____

If incorrect, say /g/ /o/ /t/ . When you put these sounds together, they make the word got. /g o t/ Got."

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* Practice Trial 3: /a/ /all/ _____

If incorrect, say /a.ll/. When you put these sounds together, they make the word all /all/ All."

- | | |
|---------------------------|----------------------------|
| 1. /h/ /er/ _____ | 2. /t/ /oy/ _____ |
| 3. /l/ /e/ /t/ _____ | 4. /b/ /a/ /ck/ _____ |
| 5. /f/ /l/ /ew/ _____ | 6. /c/ /r/ /ow/ _____ |
| 7. /sh/ /o/ /r/ /t/ _____ | 8. /b/ /ea/ /t/ /le/ _____ |
| 9. /s/ /t/ /oo/ /d/ _____ | 10. /b/ /r/ /oo/ /k/ _____ |

Incorrect Responses: _____

Correct Responses: _____

Scoring: Place a mark (Y or N) on the blank according to the student's response. Record the total number of incorrect and correct responses.

Participant Number: _____ Form 1

Segmentation - Counting

Examiner: "I'm going to say a word to you and I want you to tell me how many different sounds you hear in the word. Say each sound while moving one of these disks for each sound. Let me show you. The word is *if*. **If** has 2 sounds, /i/ and /f/" (Move disk as you pronounce each sound.) Now you try. (Give students 5 disks for all items).

Say, "How many sounds does the word _____ have?"

Practice Trial 1: hat /h/ /a/ /t/ (3)

If incorrect, demonstrate "Hat, H a t "

Practice Trial 2: goal /g/ /oa/ /l/ (3)

If incorrect, demonstrate "Goal, g oa l . "

* Practice Trial 3: Sigh /s/ /igh/ _____(2)

If incorrect, demonstrate "Sigh, s. igh "

Scoring Procedure

Correct Responses

- | | |
|-------------------------------|-------|
| 1. inn (2) /i/ /nn/ | _____ |
| 2. toe (2) /t/ /oe/ | _____ |
| 3. box (3) /b/ /o/ /x/ | _____ |
| 4. fin (3) /f/ /i/ /n/ | _____ |
| 5. sway (3) /s/ /w/ /ay/ | _____ |
| 6. play (3) /p/ /l/ /ay/ | _____ |
| 7. about (4) /a/ /b/ /ou/ /t/ | _____ |
| 8. baby (4) /b//a/ /b/ /y/ | _____ |
| 9. span (4) /s/ /p/ /a/ /n/ | _____ |
| 10. crop (4) /c//r/ /o/ /p/ | _____ |

Total Incorrect Segments: _____

Total Correct Segments: _____

Scoring: Place a line through incorrect responses for each segment. Record the number of errors and correct segments after each word. Record the total number of incorrect and correct segments at the bottom of the page.

Participant Number: _____ Form 1

Initial Deletion

Examiner: "I am going to say a word and ask you to leave off the first sound. Tell me what the word would be without the first sound. Let me show you. If I say fan without the Id sound, it sounds like an. Now you try.

Repeat the following directions; "Say without the (first) sound. Good."

Practice trial 1: ago /a/ Answer: /go/ _____

If the response is incorrect, say "Ago without the **a** is **go**."

Practice trial 2: bad /b/ Answer: /ad/ _____

If the response is incorrect, say "Bad without the **b** is **ad**."

* Practice trial 3: fur: /f/ Answer: /ur/ _____

If the response is incorrect, say "Fur without the **f** is **ur**."

Word Deleted	Sound	Correct answer	Response
he	/h/	/e/	_____
too	/t/	/oo/	_____
fear	/f/	/ear/	_____
deaf	/d/	/eaf/	_____
sway	/s/	/way/	_____
blew	/b/	/lew/	_____
yard	/y/	/ard/	_____
told	/t/	/old/	_____
flake	/f/	/ake/	_____
trap	/t/	/rap/	_____

Incorrect Responses: _____

Correct Responses: _____

Scoring: Place a mark (Y or N) on the blank according to the child's response. Record the total number of incorrect and correct responses.

**Appendix 2
The Reading Comprehension Test**

1. Read the following text, then answer the questions below:

The journey from our town to the metropolis, was a journey of about five hours. It was a little past mid-day when the four-horse stage-coach by which I was a passenger, got into the ravel of traffic frayed out about the Cross Keys, Wood-street, Cheapside, London.

We Britons had at that time particularly settled that it was treasonable to doubt our having and our being the best of everything: otherwise, while I was scared by the immensity of London, I think I might have had some faint doubts whether it was not rather ugly, crooked, narrow, and dirty.

Mr. Jagers had duly sent me his address; it was, Little Britain, and he had written after it on his card, 'just out of Smithfield, and close by the coach-office.' Nevertheless, a hackney-coachman, who seemed to have as many capes to his greasy great-coat as he was years old, packed me up in his coach and hemmed me in with a folding and jingling barrier of steps, as if he were going to take me fifty miles. His getting on his box, which I remember to have been decorated with an old weather-stained pea-green hammercloth moth-eaten into rags, was quite a work of time. It was a wonderful equipage, with six great coronets outside, and ragged things behind for I don't know how many footmen to hold on by, and a harrow below them, to prevent amateur footmen from yielding to the temptation.

1. How is London described in this text?
2. How do Englishmen think about themselves?
3. Describe the transportation means most common at the time this text was created.

2. Read the following passage then choose the best answer from A, B, C, or D.

Opera refers to a dramatic art form, originating in Europe, in which the emotional content is conveyed to the audience as much through music, both vocal and instrumental, as it is through the lyrics. By contrast, in musical theater an actor's dramatic performance is primary, and the music plays a lesser role. The drama in opera is presented using the primary elements of theater such as scenery, costumes, and acting. However, the words of the opera, or libretto, are sung rather than spoken. The singers are accompanied by a musical ensemble ranging from a small instrumental ensemble to a full symphonic orchestra.

1. It is pointed out in the reading that opera ----.
A) has developed under the influence of musical theater
B) is a drama sung with the accompaniment of an orchestra
C) is not a high-budget production
D) is often performed in Europe

- E) is the most complex of all the performing arts
2. We can understand from the reading that ----.
- A) people are captivated more by opera than musical theater
B) drama in opera is more important than the music
C) orchestras in operas can vary considerably in size
D) musical theater relies above all on music
E) there is argument over whether the music is important or the words in opera
3. It is stated in the reading that ----.
- A) acting and costumes are secondary to music in musical theater
B) many people find musical theater more captivating than opera
C) music in musical theater is not as important as it is in opera
D) an opera requires a huge orchestra as well as a large choir
E) opera doesn't have any properties in common with musical theater
- 3. Read the following passage then choose the best answer from A, B, C, or D.**

Dolphins are regarded as the friendliest creatures in the sea and stories of them helping drowning sailors have been common since Roman times. The more we learn about dolphins, the more we realize that their society is more complex than people previously imagined. They look after other dolphins when they are ill, care for pregnant mothers and protect the weakest in the community, as we do. Some scientists have suggested that dolphins have a language but it is much more probable that they communicate with each other without needing words. Could any of these mammals be more intelligent than man? Certainly the most common argument in favor of man's superiority over them that we can kill them more easily than they can kill us is the least satisfactory. On the contrary, the more we discover about these remarkable creatures, the less we appear superior when we destroy them.

- 1. It is clear from the passage that dolphins ----.**
- A) don't want to be with us as much as we want to be with them
B) are proven to be less intelligent than once thought
C) have a reputation for being friendly to humans
D) are the most powerful creatures that live in the oceans
E) are capable of learning a language and communicating with humans
- 2. The fact that the writer of the passage thinks that we can kill dolphins more easily than they can kill us ----.**
- A) means that they are better adapted to their environment than we are
B) shows that dolphins have a very sophisticated form of communication
C) proves that dolphins are not the most intelligent species at sea
D) does not mean that we are superior to them
E) proves that Dolphins have linguistic skills far beyond what we previously thought

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3. One can infer from the reading that ----.

- A) dolphins are quite abundant in some areas of the world
- B) communication is the most fascinating aspect of the dolphins
- C) dolphins have skills that no other living creatures have such as the ability to think
- D) it is not usual for dolphins to communicate with each other
- E) dolphins have some social traits that are similar to those of humans