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# The effectiveness of the Success for All reading programme on primary EAL pupils in Hong Kong

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The Success for All Foundation's *Alphie's lagoon*® phonics and reading programme is a research-based reform model developed by Robert Slavin and Nancy Madden at Johns Hopkins University. Results from research conducted by the Success for All (SFA) programme developers and external evaluators have shown the SFA programme to be effective in enhancing the reading achievement of both native and non-native English-speaking pupils in the USA. This project investigated whether the beneficial result of SFA in the USA could be replicated with Chinese primary-school pupils in Hong Kong who are learning English. This one-year matched control study showed that after a year of participating in the SFA programme, pupils from the treatment group improved in their English language skills, with particularly higher scores for the Word Attack test, as compared with pupils from the control group. The outcomes of the study provided potentially promising corroborative evidence of the effect of the SFA programme on Chinese primary pupils in Hong Kong, especially on the enhancement of English language reading skills to support early success in the formative years of learning English.

**Keywords:** Success for All; reading intervention; non-native English speaking pupils; English reading skills; Hong Kong; research-based reform model

## Introduction[1]

Echoing international trends in efforts to improve education, Hong Kong has initiated a series of educational reforms over the past two decades. A primary focus has been on enhancing language skills, especially pupils' language capacity for handling trilingualism (Cantonese, English, and Putonghua) and biliteracy (Chinese and English). In an effort to raise language proficiency, the government, schools, businesses, and community are working together to create a trilingual and biliterate society by attempting to achieve the following goals:

- setting standards and providing excellent teaching for pupils as they move through different stages of their education
- developing a professional language teaching force with strong language proficiency, subject knowledge and pedagogy
- creating a rich language environment (Wardlaw, 2005).

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Cultivating pupils' competence in biliteracy and trilingualism is one of the seven learning goals of the current curriculum reform in Hong Kong. In fact, schools, to varying degrees, are being encouraged to give an increasing emphasis to enhancing pupils' language proficiency as a strategy to improve learning effectiveness (Education Bureau, 2007, p. 15). A range of initiatives has been adopted to improve pupils' language proficiency, such as drama in education, intensive reading and literacy programmes, campus radio/TV, public speaking, and debate. In order to create a language-rich environment, schools also conduct morning assemblies in Cantonese, English and Putonghua. Schools also provide pupils with opportunities to read articles on different themes and languages, and enhance interest through literature, discussion, and practice. Furthermore, schools continue to increase opportunities for pupils to use English both inside and outside the classroom.

In response to the need for all learners to develop proficiency in English, the Curriculum Development Council (CDC) *Syllabus for English language (Primary 1–6)* (1997) states that:

> ...the English Language curriculum aims to enable every child living into the 21st century to be prepared for the changing socio-economic demands resulting from advancement in information technology, ...thus the essential learning objectives like the four language skills (listening, speaking, reading, writing), language development strategies, and the attitudes should be cultivated in learners.

In the *English language education curriculum guide* (CDC, 2002), the CDC further states that 'various aspects of learning and teaching, notably phonics, grammar, language arts, and task-based language learning, must be enhanced'. And teachers need to know how these operate in order to help their pupils become effective, independent readers.

In the CDC *English language curriculum guide* (CDC, 2004), 'phonics' was referred to as a useful strategy in the learning and teaching of reading. Phonics is an approach which is based on teaching the relationship between letters, letter groups, and the sounds associated with them. Using phonics, pupils are able to process print by decoding words (in reading) and encoding (in spelling) words at an early stage of learning. Application of phonics knowledge helps young learners gain proficiency, confidence and competence in reading aloud, which in turn may help them develop an interest in reading books in English. Phonics skills help young learners develop strategies in discriminating sounds, in listening and speaking in English, and in using accurate spelling in writing.

In Hong Kong, many primary pupils are struggling with learning to read, mainly due to their limited vocabulary. Many rely heavily on their teacher and the dictionary when encountering unknown or unfamiliar words. This limited vocabulary leads to great difficulties in comprehending text. This, to a certain extent, demotivates them to read, and hampers fluency (Chau, 2007). Hence, reading strategies can help pupils overcome hurdles in decoding words, and thus improve reading fluency. Recommending books and encouraging pupils to read extensively can help foster their interest in reading. In this regard, pupils need to be equipped with strategies to help them become independent readers.

Hong Kong pupils are required to use English at school and to master a considerable amount of vocabulary within a short time in order to cope with the textbooks and the instruction in class. However, Chau (2007) has reported that many primary pupils are struggling with learning to read mainly due to their limited vocabulary. A

study by McNeill, Fung, Lai and Ledesma (2009) revealed that primary-school teachers usually emphasize grammar teaching and pay little attention to vocabulary teaching. Hence, pupils are unable to acquire sufficient lexical items to cope with their studies. In fact, many rely heavily on their teacher and the dictionary when encountering unknown or unfamiliar words. This limited vocabulary, to a certain extent, leads to great difficulties in comprehending text, demotivates them to read, and hampers fluency (Chau, 2007).

Research studies of Palmberg (1987), Carter (1988 ), Channell (1988), Laufer (1990), McNeill (1990) and Nation (1997, 2001) show strong evidence of the prominence of vocabulary in language teaching. Read (1988) adds by saying that 'vocabulary is a component of language proficiency', and that 'many of the L2 [second language] learners are severely hampered in reading comprehension and other skills by a simple lack of word knowledge'. The generally low levels of English vocabulary knowledge made it difficult for Hong Kong pupils to understand texts and thus hindered their progress in acquiring knowledge of various academic subjects. Hence, reading strategies can help them overcome hurdles in decoding words and improve reading fluency. Recommending books and encouraging pupils to read extensively can help foster their interest in reading. In this regard, pupils need to be equipped with strategies to help them become independent readers.

The present study investigates the effect of the Success for All Foundation's *Alphie's Lagoon* reading programme, originated at the Johns Hopkins University, on the reading achievement of primary-school children in Hong Kong. Using standardized reading assessment instruments widely adopted in the USA, pupils were pre- and post-tested before and after participating in the programme. Outcomes of the Success for All (SFA) group were compared with those of a control group to ascertain whether the SFA can attain similar beneficial results, as has been documented with pupils of a similar age group in the USA, with non-native English-speaking pupils in Hong Kong.

## Literature review

In the past few decades, schools, politicians, and reading experts have argued about the best way to teach reading. As Zakaluk (1996) points out:

> There has been extended controversy among reading authorities about the approach to use in teaching beginning reading, an either/or kind of controversy, the essence of which centres upon whether the first emphasis in word recognition instruction should be phonics- or whole language-based. In the one view of reading, learners are perceived as being almost passive decoders of visual stimuli, while in the other, learners are viewed as active participants who construct their own encodings.

Two teaching approaches are derived from these two perspectives on teaching reading, namely phonics versus whole language approaches. Phonics is considered a 'bottom-up' approach where students decode the meaning of a text. According to Dombey and Moustafa (1998), in a bottom-up approach, '[Teachers] present reading as essentially a decoding process, which consists of learning a system of letter–sound relationships, translating symbols on the page into sounds, and synthesizing or blending the sounds together into words'. This approach views reading as a process of decoding written symbols into their aural equivalents in a linear fashion. Thus, the reader first discriminates each letter as it is encountered, sounds these out, matching

the written symbols with their sound equivalents, blends these sounds together to form words, and consequently derives meaning. The advantage of phonics, especially for students with large vocabularies, is that once they get the phonics foundation right, they can read a wide variety of children's literature. It is their foundation for success in reading.

On the other hand, Adams (1990) states that 'children are more likely to begin with a repertoire of known words and proceed from wholes to parts. Learning phonics should be related to and must be a part of other aspects of learning to read, which makes it more meaningful for both teachers and pupils'. Whole language is considered a 'top-down' approach, where the reader constructs a personal meaning of a text based on their prior knowledge to interpret the meaning of what they are reading. In a top-down approach, children need practice in seeing and understanding decodable words in real reading situations and with connected text, and phonics instruction should be part of a reading programme that provides ample practice in reading. A text can thus be understood even if all of the individual words are not understood. Based on this perspective, the reading teacher should focus on activities that generate meaning rather than on mastery of word recognition. With whole language, teachers are expected to provide a literacy-rich environment for their students, and to combine speaking, listening, reading, and writing in the curriculum. Children are encouraged to memorize words as whole units, and to analyze them in context. The weakness of whole language method, however, is that some children never get a full phonics foundation hence they are unable to decode unfamiliar words.

The SFA reading programme consists of key elements of the bottom-up approach to the teaching of reading. In brief, SFA is a comprehensive reading programme that emphasizes systematic phonics, cooperative learning, tutoring for struggling pupils, family support programmes, and many other elements (Slavin, Madden, Chambers & Haxby, 2009). The assumption at the heart of the SFA programme design is that preventing the occurrence of early learning problems with immediate comprehensive intervention is more effective than later remediation of academic difficulties. First implemented during the 1987–88 school year in five inner-city schools in Baltimore, Maryland, SFA has expanded to over 1200 schools in 48 states across the USA and has served over two million pupils. In addition to the USA, SFA reading programmes have been adopted in Britain, Mexico, Israel, Canada, and Australia (Slavin et al., 2009).

SFA is one of the most extensively evaluated of all reading reform models in the USA. There are a large number of experimental studies which have been carried out to evaluate SFA. Evaluations by programme developers and many independent researchers have shown consistently positive results on reading measures, attendance, and reduction in special education placement (Madden, Slavin, Karweit, Dolan, & Wasik, 1993; Slavin et al. 1996; Slavin & Madden, 2006). Perhaps the most rigorous study conducted on the effectiveness of SFA was by Borman and his colleagues (Borman et al. 2005a, 2005b, 2007). The project, funded by the US Department of Education, involved 41 high-poverty elementary schools and over 6000 pupils across the USA. Schools were randomly assigned to use SFA or to continue using their regular programmes from kindergarten to Grade 2 (age five–eight). This three-year longitudinal study found that pupils who attended SFA for three years gained substantially more in several tests on reading skills than similar pupils in control schools.

In addition, three studies have evaluated the effects of SFA with pupils with English as an Additional Language (EAL) being taught in English. In this adaptation,

strategies for pupils with EAL (such as total physical response) are integrated into teaching for all children, whether or not they are limited in English proficiency. The activities of EAL teachers are closely coordinated with those of other classroom teachers, so that EAL teaching directly supports the SFA curriculum, and EAL teachers often serve as tutors for children with limited English proficiency.

The first study of SFA with English language learners was a matched control study conducted in Philadelphia, Pennsylvania with two schools. Both schools served many Cambodian-speaking children and nearly all children qualified for free lunches. At the end of a six-year longitudinal study, Asian SFA fourth- and fifth-graders (age 9–11) significantly outperformed their counterparts in the control school. On average, they were 2.9 years ahead of controls in fourth grade (median ES = +1.49), and 2.8 years ahead in fifth grade (median ES = +1.33). Asian SFA pupils were reading about a full year above grade level in both fourth and fifth grades, while controls were almost two years below grade level. Non-Asian pupils also significantly exceeded their controls at all grade levels (Slavin & Madden, 1999).

The second study was conducted by Livingston and Flaherty (1997) in California. Participants were Spanish-dominant EAL pupils who were taught in English. Combining results across three cohorts, EAL pupils performed far better on English reading measures in SFA than in matched control schools in first and second grades (age six–eight).

A one-year study by Ross, Smith and Nunnery (1998) compared Mexican American EAL pupils in two urban SFA schools with those in three schools using locally-developed federal funded (Title I) reform models and one using Reading Recovery. Pupils were pre-tested on the English Peabody Picture Vocabulary Test (PPVT) and then post-tested on the Woodcock Word Identification, Word Attack, and Passage Comprehension scales, and the Durrell Oral Reading Test. Analyses of covariance (ANCOVA) found that Hispanic SFA pupils scored significantly higher than control pupils on all measures (ES = +0.52).

All of the aforementioned studies have been conducted comparing SFA and non-SFA children in a first language (L1) environment. However, no studies have been done on the effect of SFA on the reading achievement in an L2 environment. This project seeks to enrich the research base with research on SFA's effect with Hong Kong pupils in an L2 environment.

## Methods

### *Methodology and research design*

The study employed a matched control design. In September 2005, the research team began working with the staff at the experimental school to implement the SFA programme in Primary One. A school with a similar pupil population and characteristics was chosen in the same neighbourhood to serve as a control group.

### *Participants*

Three hundred and twenty-seven Primary One (P1) pupils (age six) were recruited from two primary schools in Hong Kong. The SFA and control school had five and four P1 classes, respectively. Each class consisted of 32–35 pupils. The two schools were similar in terms of historical achievement level, pupil demographics, and teacher qualifications.

Both the experimental (hereafter 'SFA') school and control school are located in Tin Shui Wai, a new town in the northwestern part of New Territories in Hong Kong with a population of 285,000 (Hong Kong Government, 2008). Owing to the close proximity to Mainland China, the town has a substantial number of new immigrants from Mainland China. Both schools accepted pupils from Mainland China who spoke fluent Putonghua, but very little Cantonese and English. Most of the pupils came from low-income families; almost half of the pupils were aided by the Comprehensive Social Security Assistance (CCSA). Most of the parents only had primary or secondary education so they did not have the ability to teach their children – which directly affected their learning process. Also most of these pupils did not receive any pre-primary education. Thus, learning the language, particularly English, was a big challenge for them. This was also reflected in their entrance English examination results – with an average mark of only 50% in both schools, i.e., most students only earned an average mark of 50% when they did the entrance examination for the English subject at the primary school of their choice. As a result, they were grouped into a class of low ability students.

In terms of teacher qualifications, the SFA school had a total of 51 teaching staff, 93% of whom had recognized teacher training qualifications. Around 65% of the teachers had between five and nine years of teaching experience. The control school had a total of 42 teaching staff, with 100% recognized teacher training qualifications. Over 80% of them had between five and 10 years of teaching experience. In addition to these criteria, a pre-test was administered to all pupils in both treatment and control school to test the initial equivalence of these two groups.

### *Procedures*

Prior to the implementation of the SFA programme, five teachers from the SFA school received detailed teacher's manuals supplemented by two days of in-service training at the beginning of the academic year and several in-service sessions throughout the year on topics such as classroom management, teaching pace, and implementation of the curriculum. The teacher-participants were Chinese–English bilingual teachers and they were qualified English language teachers who were locally trained in Hong Kong. Teacher implementation of SFA started in October 2005, with three 30-minute lessons conducted weekly for all P1 pupils. Two hundred sets of pupil kits were also purchased by the school, and every pupil obtained a full set of the learning materials for school and home use. All 175 pupils in the experimental group received the same SFA teaching methods. Teachers used a series of 'shared stories' and other materials designed for SFA. Pupils practiced oral reading to partners as well as to the English language teacher. At the participating school, the English language teachers conducted the SFA programme during the regular English language periods.

### *Programme description of* Alphie's lagoon

The SFA's *Alphie's lagoon* reading programme emphasizes development of basic language skills and sound and letter recognition skills, and uses an approach based on sound blending and phonics starting in P1. There are two components in *Alphie's lagoon*: Fast Track Phonics and Shared Story lessons. Fast Track Phonics is a systematic phonic programme that builds pupils' skills in letter–sound correspondence,

blending sounds to make words, and using sounds to write words. To make the learning experience more enjoyable, colourful mnemonic picture cards, Alphie the puppet, rhymes, chants, games and videos are used. In addition, partner work and sharing are often used to promote cooperative learning and class participation. Beginning with the fourth lesson, pupils read shared stories as part of each lesson. Shared stories allow pupils to read complex, engaging, and interesting stores even when they know only a few letter sounds. Pupils are able to use the sounds that they learn from Fast Track Phonics to decode words in the story with the help of their teacher or partners. A programme facilitator from the participating university worked with the SFA school to oversee (with the principal) the operation of the SFA model. The facilitator helped plan the SFA programme, helped with scheduling, and visited classes frequently to help teacher-participants with individual problems. They also helped teacher-participants deal with any classroom problems and coordinated the activities of the SFA programme.

### *Control condition*

The control school participated voluntarily in a locally-developed programme. Reading was promoted through different reading time in different subjects. Activities like pair reading, a reading star scheme, and books exhibitions were also regularly held to encourage pupils to read more. Three 45-minute lessons were conducted weekly for all P1 pupils and the main mode of teaching included an activity approach and collaborative teaching. Teachers received intensive training in four components: (1) teaching reading to second language learners; (2) assessing reading; (3) classroom environment; and (4) classroom management. Training was in the form of a six-hour structured learning workshop on a yearly basis.

### *Measures and analysis*

Because of the nature of the SFA programme, a quantitative research method was employed to provide a general picture of the changes in pupil learning outcome of the participating school during the project period. At the SFA and control schools, all pupils starting P1 in September 2005 were individually pre-tested on the PPVT (Dunn and Dunn, 1997) and then post-tested on the Letter Identification, Word Identification, and Word Attack scales of the Woodcock Reading Mastery Tests – Revised (WRMT-R) (Woodcock, 1987) by the end of the academic year 2005–06. The Letter Identification scale measures the pupil's ability to identify letters of the alphabet. The Word Identification scale is used to assess recognition of common sight words, and the Word Attack scale assesses phonetic synthesis skills (see details in the Appendix). Testing was done by trained assessors, unaware of the assigned conditions. The WRMT-R was normed on a national sample of children and the internal reliability coefficients for the three subtests used were 0.84, 0.97, and 0.87 respectively.

An ANCOVA was conducted on each outcome separately. Pre-test score was used as the covariate in the main analyses to adjust for any initial difference between the two groups and to increase statistical power. The unit of analysis was at the pupil-level. No subgroup analyses were conducted on pupils whose native language was not Cantonese because they represented a small proportion of the entire sample. Outcomes are characterized in terms of effect sizes, which are the

difference between the SFA and control means divided by the standard deviation of the control group.

### *Power estimates*

With an expected total number of 300 pupils in the study, the statistical model would provide adequate statistical power to detect an effect size of +0.25 at the pupil level using ANCOVA. Two main factors are at play when determining the power estimates in ANCOVA:

(1) the proportion of variability explained by a covariate ($r^2$)
(2) the desired effect size.

Previous research has indicated that approximately 40–60% of the variability on the outcome measures can be explained by a pre-test covariate. Using a conservative estimates of $r^2 = 0.40$ and $d = +0.25$, and taking the clustering effect into consideration, the estimated power for the anticipated sample size of 300 pupils would be over 0.80.

## Results

The final analytical sample sizes for the experimental and control groups respectively were 167 and 140. Eighteen pupils, 8 in the experimental and 10 in control, either did not participate in post-tests or had invalid post-test scores. As indicated in Table 1, the control group scored significantly higher than the SFA group ($F_{(1, 308)} = 32.16$, $p = 0.02$) at pre-test with an effect size of −0.30. A statistically significant difference was found at post-test on Word Attack ($F_{(1,307)} = 170.07$, $p < 0.0001$), adjusting for pre-test difference. A marginally significant difference was also found on Letter Identification ($F_{(1, 307)} = 3.19$, $p = 0.10$). However, no significant differences were found on Word Identification ($F_{(1, 307)} = 0.17$, $p = 0.79$). Effect sizes for Word Attack, Letter Identification, and Word Identification were +1.63, +0.16, and +0.04, respectively.

## Discussion

This pilot study of SFA in Hong Kong is noteworthy for several reasons. First, the results of this study are consistent with previous studies on SFA and the general

Table 1. Results for pre-test and post-tests.

| | | *n* | Mean | SD | Adjusted mean | *p*-value | ES |
|---|---|---|---|---|---|---|---|
| PPVT | SFA | 167 | 42.34 | 4.71 | | 0.00* | −0.30 |
| | Control | 140 | 44.31 | 6.55 | | | |
| Letter ID | SFA | 167 | 435.91 | 6.52 | 438.16 | 0.10** | +0.16 |
| | Control | 140 | 435.79 | 15.04 | 435.78 | | |
| Word ID | SFA | 167 | 395.92 | 16.08 | 396.95 | 0.79 | +0.04 |
| | Control | 140 | 397.31 | 19.99 | 396.09 | | |
| Word Attack | SFA | 167 | 466.31 | 13.88 | 465.96 | 0.02* | +1.63 |
| | Control | 140 | 446.31 | 12.08 | 446.32 | | |

Notes: SD, standard deviation; ES, effect size, PPVT; Peabody Picture Vocabulary Test; SFA, Success for All; robust standard errors were used to calculate *p*-values to account for the clustering effect; *$p < 0.05$; **$p < 0.10$.

programme theory on the development of young children's emergent literacy skills. This study showed that after 10 months of participating in the programme, SFA pupils scored higher than the control group on two of the three reading achievement measures. The most notable difference was on Word Attack (WA) results, where the SFA pupils significantly outperformed the control pupils with an effect size of +1.63. The purpose of the Word Attack test was to measure the ability of a pupil to apply phonic and structural analysis. These basic skills are fundamental to other reading skills such as word identification and reading comprehension in later years as suggested in previous studies on SFA pupils. This large effect size is most likely due to a strong emphasis of phonological and phonemic awareness skills of the SFA programme in early grades. Previous studies have also showed that the effect size of Word Attack was generally higher than that of other measures.

Second, several studies have examined the effects of adaptations of SFA outside of the USA (Chambers, Abrami, & Morrison, 2001; Calderón, 2001; Hertz-Lazarowitz, 2001; Center, Freeman, & Robertson, 2001). These adaptations have ranged from relatively minor adjustments to accommodate political and funding requirements in Canada and England to more significant adaptations in Mexico, Australia, and Israel. Generally, these studies showed similar positive results. The present study adds to this literature base providing evidence that the principles on which SFA are based transfer to other cultural and language contexts.

Third, among the large body of research conducted on SFA, no studies have been conducted in an L2 environment. This study fills a gap in the current research literature, showing that similar programme effects can be attained in an L2 environment.

Furthermore, the SFA reading programme has proved in the USA to be educationally cost effective. If successful in Hong Kong, this programme – or a Hong Kong adaptation – can be expected to provide similar cost-saving benefits (e.g., reduction in the need for remedial education, special education placements and retentions).

However, there are also several limitations in this study. First, the present study only focused on the quantitative outcomes of the experimental programmes. Though a number of teachers and pupils told the researchers that they enjoyed the programme, no systematic qualitative data were collected to document the implementation fidelity and the experiences that these teachers and pupils had while participating in the programme. An interesting direction for future study should focus on these two aforementioned aspects.

Second, this study was a one-year matched control study. Future research should investigate the longitudinal programme effects on Chinese pupils' reading skills. Multi-year studies on SFA primary reading programmes in the USA and other countries have showed continued success in reading and comprehension skills in later years (Borman et al., 2007; Madden et al., 1993).

Third, the current study employed a quasi-experimental design with only one school in each condition. Though the findings showed promising evidence that the SFA programme improved initial reading achievement of students in an L2 environment, causal relationships were difficult to determine owing to a variety of confounding variables that might exist in school settings and a limited number of schools in each condition. Future studies should consider using random assignment and a larger number of schools to look at the causal effect of the SFA programme in an L2 environment.

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## Appendix. Standardized assessments, Peabody Picture Vocabulary Test (PPVT) and Woodcock Reading Mastery Test – Revised (WRMT-R)

Each participant was individually administered the following tests: PPVT (pre-test) and all three of the Woodcock Reading Mastery Tests (post-test). Descriptions of the measures are as follows.

### *PPVT*

The PPVT was designed to measure a subject's receptive (hearing) vocabulary for Standard American English. It consisted of 84 items, each of which contained a picture representing a word. If the participants were able to point to the picture matching the word the assessor said, he/she received a score of 1 for the question, if not, he/she received a score of 0. The test stopped if the participant failed to answer six consecutive questions.

### *WRMT-R*

#### *Letter identification (LI)*

LI measured a pupil's ability to identify letters of the alphabet. The set of letter forms in this test included Roman, italic, and bold type; serif and sans-serif type styles; cursive characters; and several special type styles (e.g., script and decorative font such as those appearing in advertisements). There were 51 items in the section. Participants received a score of 1, if he/she correctly identified the given letter, and a score of 0 if he/she did not. The test ended when the participant failed to answer six questions consecutively.

#### *Word identification (WI)*

The WI section consisted of 106 questions. The test required pupils simply to identify isolated words. Correct identification of the word was given a score of 1 for each item. A score of 0 was given if he/she failed to identify the word. The test ended when the participant answered six consecutive items incorrectly.

#### *Word attack (WA)*

In WA, participants were asked to read some mock (nonsense) words to measure their ability to apply phonic and structural analysis. This section consisted of a total of 45 items. As with other sections, participants received a score of 1 if he/she was able to pronounce the given word correctly; if not, they were given a score of 0. The test ended when the participant consecutively answered six items incorrectly.