

Relationship between Oral Reading Fluency and Reading Comprehension among ESL Students

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ABSTRACT

Fluency is one of the five components of reading competency alongside with phonemic awareness, phonics, vocabulary and comprehension. It is related to reading comprehension and it can be used to predict the reading competency of a reader. However, research on such relationship is limited in ESL context. Hence, the purpose of this study was to determine the relationship between three sub-skills of fluency (accuracy, reading rate and prosody) and reading comprehension among a sample of ESL students in a Malaysian school. It also aims to examine the concurrent validity of using the objective (i.e. reading accuracy and rate) and subjective (reading prosody) measures of fluency. It is hoped that the findings could shed light in identifying the possible methods of assessing oral reading fluency in ESL classrooms. The participants were 67 lower secondary school students who learn English as their second language. The students completed a reading comprehension test and then they were asked to read aloud the texts used in the test, individually. The individual reading sessions were audio recorded for the analysis of three sub-skills of reading fluency. Bivariate correlation analysis was then conducted to measure the strength of relationships with reading comprehension. The results revealed that all three sub-skills of fluency were strongly correlated with reading comprehension. Both objective (accuracy and reading rate) and subjective (prosody) rating scales were strongly related, and thus could be used in parallel or interchangeably in the assessment of oral reading fluency. The findings provided evidence that in line with the research findings in English as the first language contexts, reading fluency is closely associated with reading comprehension in an ESL context.

Keywords: reading; ESL; fluency; comprehension; assessment

INTRODUCTION

Fluency is one of the five components of reading competency alongside with phonemic awareness, phonics, vocabulary and comprehension (National Reading Panel Report, 2000). In most reading instructions, the focus is invariably on reading comprehension and vocabulary. The aim of reading is generally to ensure that readers are able to comprehend a written text and could acquire a range of vocabulary at the end of the lesson. Although comprehension is the ultimate goal of reading, other skills cannot be neglected if one were to

achieve the goal. Decades of research has shown that the other skills, namely phonemic awareness, phonics, vocabulary and fluency are fundamental for readers to achieve reading comprehension (National Reading Panel Report, 2000). With regard to reading assessment, these four skills have been widely recognized as closely associated to reading comprehension, and hence could act to predict or forecast the achievement of reading comprehension (e.g., Kim et al., 2010; Scarborough, 1998). Pertaining to this, reading fluency, particularly text reading fluency has been found to be closely related to reading comprehension amongst language learners beyond the lower elementary/primary school level (Fuchs et al., 2001; Geva & Farnia, 2012).

To date, research on fluency was heavily done in the context of native language, particularly in the English as the first language context. Comparatively, oral reading fluency in English as Second Language (ESL) context has been scarce (refer to Grabe, 2010, for a review on reading fluency in first language, L1 and second language, L2 contexts). In one of the studies that focused on L2 reading fluency, Lems (2005) identified two different conditions when L2 learners read a text aloud. The first condition is that L2 readers may decode without comprehension. In the first language context, when a reader can pronounce the word aloud, he or she will automatically draw upon his or her oral word bank to find a semantic match for the word meaning. In contrast, L2 readers may be able to decode the text but there is no guarantee that they will effectively extract the meaning. Another condition is that L2 learners may be able to comprehend without being able to decode or pronounce. This means that L2 readers may know the meaning when reading silently yet they are unable to pronounce the word if they were asked to read aloud. Lems (2005) provided a clear illustration of how the relationships of reading fluency and reading comprehension could differ in L1 and L2 contexts. Therefore, it remains largely unknown whether the findings on fluency measurements as reported by first language researchers would be duplicated in ESL contexts, such as the ESL context in Malaysia (Kaur, 2013; Kaur, Ganapathy & Kaur Sidhu, 2012).

AUTOMATICITY THEORY

Automaticity theory provides a perspective to interpret the relationships between oral reading fluency and reading comprehension (refer to Logan, 1997 for a review). The automaticity theory of reading draws on cognitive research which showed that brain has limited capacity. LaBerge and Samuels (1974) theorized that readers have a limited amount of mental energy available for reading. In their reading model, they described a concept called automatic information processing or automaticity. It is argued that human brains are single-channel processors where we can only attend to one thing at a time. If we needed to do more than one thing at a time, one of the activities must be so well learnt that it can be performed automatically. For example, in the case of oral reading, a reader is required to perform two independent tasks: decoding (i.e., sounding out words) and comprehending (i.e., constructing meaning of the text). Therefore, a fluent reader is usually recognized as the one who has mastered decoding skills. He or she is able to decode to the point that word recognition becomes instantaneous. Correspondingly, he or she can have more focus on making sense of the meaning of the text (Kuhn & Stahl, 2003). In contrast, non-fluent readers whose decoding processes are not automatic requires conscious attention to decode the sound units, thus it becomes more effortful for them to allocate their attention to comprehending the meaning. In other words, it means that more processing space is used for decoding and less space is available for comprehension.

READING COMPREHENSION

Reading comprehension depends on two equally important skills namely language comprehension and decoding (Shankweiler et al., 1999). Decoding means the ability of readers to recognize and to process written information. However, decoding is just a word-level (lower-level) skill which requires the knowledge of the spelling sounds (Pasquarella, 2009). Therefore, decoding alone is not sufficient for a good reading, in which comprehension is also required. On the other hand, reading comprehension means understanding and gaining meaning from the words read. It is a process when a reader interacts with the text and makes meaning from the text they read (Kruger, 2008). Thus, decoding and language comprehension are intertwined and will eventually contribute to reading comprehension. The usual measures of reading comprehension include question answering, cloze, and passage recall as well as oral reading fluency (Fuchs et al., 2001). Though there are different measures available to assess reading comprehension, most reading teachers continue to use only one measure despite the fact that many studies warn of the limitations in using a single test to assess reading comprehension (Falke, 2008).

ORAL READING FLUENCY

Oral reading fluency refers to the oral translation of text with accuracy, speed, and appropriate expression (Breznitz, 2006; Fuchs et al., 2001; Rasinski, 2000). In other words, three basic sub-skills of oral reading fluency are ‘accuracy’, ‘speed’ and ‘prosody’. Reading accuracy refers to the ability to decode and generate the phonological representations of written words (Penner-Wilger, 2008a). To achieve this, the reader needs to first master the basic alphabetic principles and then able to blend separate sounds to form a word (Torgeson & Hudson, 2006; Courbron, 2012). Reading accuracy is in line with the automaticity theory because when a reader is able to decode a word quickly and sounds it out correctly with little cognitive effort or attention, it makes comprehension much easier to attain. Alternatively, when a reader needs to give full attention to decode the sounds of a word, the reader is less likely to comprehend what he or she just read. Therefore, accuracy is always being associated with reading comprehension as when a reader reads incorrectly, the meaning of the passage is often distorted and misinterpreted.

The second sub-skills, the speed of reading is also known as the reading rate. It refers to the speed and fluidity in which a reader moves through connected text (Hudson, Lane & Pullen, 2005). According to Courbron (2012), reading with appropriate speed is an indication that the reader has a functional working memory, able to chunk the words together, and can comprehend the words read. In relation to this, there was research evidence which pointed to the relationship between reading rate and reading comprehension (O’Connor, Swanson & Geraghty, 2010). Meanwhile, the third sub-skill, i.e., reading prosody, refers to the “naturalness of reading” (Penner-Wilger, 2008b, p. 3). In other words, it refers to the ability of a reader to read with proper phrasing and expression and to imbue text with suitable volume, stress, pitch and intonation (Penner-Wilger, 2008b). To read with the appropriate expressions, the reader needs to be able to divide the text into meaningful chunks and able to actively construct the meaning of the passage he or she read. A study by Dowhower (1991) revealed that poor readers are less prosodic in their reading when compared to good readers. In particular, Binder et al. (2012) found that poor readers pause longer and more frequently than good readers. The use of prosody in reading shows that a reader could perform both decoding and meaning construction by connecting prosodic features inherent to the text (Hook & Jones, 2002). As a result, using prosody correctly is another indication of oral reading fluency that the reader comprehends what he or she has read.

ORAL FLUENCY ASSESSMENT

As discussed earlier, reading accuracy, rate and prosody are the three sub-skills of oral reading fluency. For the purpose of assessment in schools, reading accuracy and rate could be objectively judged, while reading prosody requires more subjective evaluation by the teachers. The two objective measures, namely reading accuracy and rate could be measured based on predetermined formulas (refer to Table 1).

TABLE 1. Calculation of Reading Accuracy and Reading Rate

Variable	Operational Definitions
a) Reading Accuracy	Total number of words read correct divided by Total words read (correct or corrected + uncorrected errors)
b) Reading Rate	Number of words read correctly (include errors corrected) per minute (WCPM)

On the other hand, reading prosody is often assessed by using a qualitative rubric. An example is the Multidimensional Fluency Rubric developed by Zutell and Rasinski (1991). Even though this measurement is more subjective and time consuming, it nevertheless provides a more holistic view on the overall performance of student's fluency, when coupled with reading accuracy and rate. The Multidimensional Fluency Scale (MDFS) developed by Rasinski (2004) is a more recent adaptation of Multidimensional Fluency Rubric (Zutell & Rasinski, 1991) (refer to Table 2).

TABLE 2. Multidimensional Fluency Scale (Rasinski, 2004)

Score	Expression and Volume	Phrasing	Smoothness	Pace
1	Read words as if simply to get them out. Little sense of trying to make text sound like natural language. Tend to read in a quiet voice and flat tone.	Read in monotone with little sense of phrase boundaries, frequently read word by word.	Make frequent extended pauses, hesitations, false starts, sound outs, repetitions and/or multiple attempts.	Read slowly and laboriously.
2	Begin to use voice to make test sound like natural language in some in areas of the text but not in others. Focus remains largely on pronouncing the words. Still read in a quiet voice and flat tone.	Frequently read in two- and three- word phrases, giving the impression of choppy reading, improper stress and intonation fail to mark ends of sentences and clauses.	Experience several 'rough spots' in text where extended pauses or hesitations are more frequent and disruptive.	Read moderately slow.
3	Make text sound like natural language throughout the better part of the passage. Read with intonation. Occasionally slips into expressionless reading. Voice volume is generally appropriate throughout the text.	Read with a mixture of run-ons, mid sentence pauses for breath and some choppiness, reasonable stress and intonation.	Occasionally break smooth rhythm because of difficulties with specific words and/or structures	Read with an uneven mixture of fast and slow pace.
4	Read with good expression and enthusiasm throughout the text. Vary expression and volume to match his or her interpretation of the passage.	Generally read with good phrasing, mostly in clause and sentence units, with adequate attention to expression.	Generally read smoothly with some breaks, but resolves words and structure difficulties quickly, usually through self-correction.	Consistently read at conversational pace, appropriate rate throughout reading

ASSESSMENT OF ORAL READING FLUENCY IN MALAYSIA

In a move not to overly rely on examinations, Malaysia has introduced the National Educational Assessment System and this has resulted in the introduction of fluency assessment as a measure to complement the traditional reading measures namely the written comprehension test (Malaysia Education Blueprint 2013-2015), as practiced in PMR (*Penilaian Menengah Rendah* – Lower Secondary Assessment). In PMR, the written comprehension test was in the format of Multiple Choice Question (MCQ). One obvious limitation of MCQ is that it allows students to randomly choose the answers and possibly to receive a correct guess. As a result, this might not reflect the real reading capabilities of students. In a recent initiative, the assessment of oral reading fluency was introduced into the Form One English Curriculum, as well as the latest public examination - PT3 (*Penilaian Tingkatan 3* – Form 3 Assessment). This is also one of the efforts in introducing an alternative measure for reading comprehension. Teachers are instructed to assess each student's oral fluency by evaluating their pronunciation and intonation. Therefore, most teachers probably do not know what criteria to look for, what to observe, and most importantly, how to assess each student objectively or fairly.

Due to these shortcomings, this study aims to examine the relationship of reading comprehension and three sub-skills of oral reading fluency, namely reading accuracy, rate and prosody in an ESL context. Through this examination, it is hoped to identify possible methods of assessing oral reading fluency in ESL classrooms. Specifically, the study also looks at the concurrent validity of using the objective (i.e., reading accuracy and rate) and subjective (reading prosody) measures of fluency. Ultimately, it is hoped that the findings would add some preliminary knowledge to oral reading fluency in an ESL context. Adhere to the above problems, the following research questions were asked:

1. To what extent does objective rating of fluency (i.e. accuracy and reading rate) correlate with perceptual rating of fluency (i.e. reading prosody)?
2. To what extent does each of the components of fluency correlate with reading comprehension?

METHOD

SAMPLE

The sample of this study was Form Two students from a secondary school in Perlis, a northern state of Malaysia. The school selected was an average ability school. The rationale of choosing an average ability school was to ensure that the sample would comprise of a mixed distribution of low and high achieving students. There were eight Form Two classes comprising of 223 students. Three classes were chosen upon the consent of school administrators and suggestions of class teachers. These three classes represent a high-, average- and low-performing class. The total sample consisted of 67 students with 29 (43.3 %) male students and 38 (56.7%) female students. Among them, 34 (50.7%) were Malay students, 31(46.3%) were Chinese and 2 (3%) were students of other races, i.e., an Indian and a Siamese.

INSTRUMENTS

Three instruments were developed and used for data collection in this study. The instruments included a reading comprehension test, a scoring rubric for reading comprehension, and rubrics for each sub skill of fluency. The content validity of all the instruments was checked by a panel of reviewers (experienced school teachers and lecturers). Slight modifications such

as the organization of options, ambiguity of questions and grammar errors were made after the panel has checked the instruments. Meanwhile, the multi-dimensional rubric used was modified by adding 0 marks for each area because it was found in the pilot study that there were some low-performing students who could not perform at all in oral reading.

First, a reading comprehension test which comprised of three levels of narrative texts was designed to test both the students' reading comprehension and their oral fluency. The text lengths were between 100 – 300 words. Texts in the narrative forms were chosen for a couple of reasons. First, students of lower secondary school are familiar with story as their textbooks contain many narrative texts and they are highly exposed to prose of literature too. Second, stories contain dialogues or vivid descriptions which are more likely to elicit expressive reading from the subjects. The three texts were taken from three levels of national examinations, namely (1) Primary School Evaluation Test (commonly abbreviated as UPSR in Malay) (2010) comprehension text, (2) Lower Secondary Assessment PMR comprehension text (2009) and (3) Malaysian Certificate of Education SPM comprehension text (2009). The texts were not included here due to copy-right concern. These texts were used to control the effects of text difficulties as research has shown that prosody might decline when students read more complex texts (Benjamin & Schwanenflugel, 2010). Therefore, using simple to advanced texts would provide a more holistic context of testing. Then, the questions were formed and arranged in the order according to the revised version of Bloom's taxonomy (Krathwohl, 2002): remembering, understanding, applying, analyzing and evaluating. The purpose of this arrangement was to ensure that the test covered various aspects, to add varieties and complexities to the test, and to make the assessment more comprehensive. However, the highest skill in the revised Bloom's taxonomy, namely 'creating' was not tested as it requires students to make advanced interpretations and to produce new knowledge rather than to purely extract and construct meanings from the reading. It was a higher skill than what was targeted to be obtained from the context of the current study. In the final design, each text consisted of five multiple choice questions (MCQ) and four subjective questions. The subjective questions demanded the students to identify meanings and provide opinions. One mark was given for the correct answer of each question, except for the question on evaluation. Two marks were given on the correct answer of evaluation question as it was a higher order of comprehension. The total mark for each test was 10.

For the assessment of fluency skills, the first 50 words were selected from each text for the rating of accuracy and rate. The formula previously shown in Table 1 was used for the rating of accuracy and rate. For the assessment of prosody, the scoring rubric of prosody was adopted from Rasinski's Multi-Dimensional Fluency Scoring (2004), with only a slight modification of adding 0 marks for each area. The reliability of this rubric had been previously verified by the researchers in the original research (Rasinski, Rikli & Johnston, 2009). In this study, its face validity was determined by a panel of five reading experts, consisted of English language teachers and lecturers. The panel agreed that this rubric was suitable to be used for the scoring of prosody. After consultation with the panel, it was also decided that the scoring would not consider differences in pronunciation due to dialect and language differences. One example of such differences is the variation of syllable stress patterns. For example, the word 'banana' has stress on the second syllable but local Malaysian ESL students usually produce it with equal stress on all three syllables. These differences were not considered as prosody errors as long as it was intelligent and comprehensible pronunciation (Munro, 2011).

DATA COLLECTION METHOD AND STATISTICAL ANALYSIS

First, students were given 40 minutes to answer comprehension questions. After collecting all the papers, the researcher recorded students' fluency one by one using a recorder in a quiet room. All the recordings and test papers were assigned with numbers in order to maintain confidentiality.

The data was then analyzed using Pearson correlation coefficient. Pearson-r correlation coefficient was used to measure the strength of relationship between the variables stated, namely reading accuracy, reading rate, reading prosody and reading comprehension. To interpret the size of correlations, Pearson coefficient, *r*, below plus or minus 0.35 is considered low or not related, coefficient between plus or minus 0.35 to 0.65 is moderately related and coefficient higher than plus or minus 0.65 is considered highly related (Gay, Mills & Airasian, 2006).

ANALYSIS AND FINDINGS

READING COMPREHENSION

The mean scores for reading comprehension is 4.17 (SD= 2.49). Since the total score for reading comprehension is 10 (average score from three tests), this result suggested that as a group, the students did not perform well in reading comprehension. Meanwhile, as calculated with the formulas stated in Table 1, the mean scores of students for accuracy is 0.75 (SD=0.21) and the mean score for reading rate is 75.38 (SD=36.83). The total score for prosodic reading is 16 (MDFS: Rasinski, 2004) but the mean score is 7.05 (SD=3.53). The reduced mean score showed that the students performed less well in terms of reading prosody.

TABLE 3. Students' scores for reading comprehension, accuracy, rate and prosody

	Reading comprehension	Reading accuracy	Reading rate	Prosody
Mean	4.17	.75	75.38	7.05
Std. Deviation	2.49	.21	36.83	3.53

CORRELATION

A Pearson product-moment correlation coefficient was computed to assess the relationship between the students' scores within the three fluency sub-skills, namely reading accuracy, reading rate and reading prosody (refer to Table 4). The result revealed that there was a strong, positive correlation between the reading accuracy and reading prosody, $r(65) = .89$, $n = 67$, $p < .01$. Similarly, there was also a strong, positive correlation between reading rate and reading prosody, $r(65) = .94$, $n = 67$, $p < .01$. Hence, the results show that there was a significant relationship between objective rating of fluency (accuracy and rate) and perceptual rating of fluency (prosody).

TABLE 4. Correlation between accuracy, reading rate and prosody

	Reading accuracy	Reading rate
Mean scores of prosody	.89*	.94*

* Correlation is significant at the .01 level (2-tailed)

A Pearson's correlation coefficient was then used to assess the relationship between the students' reading accuracy, reading rate, reading prosody and reading comprehension respectively (refer to Table 5). The result revealed that the three sub-skills of fluency were correlated with reading comprehension. There was a moderately strong positive correlation between reading accuracy and reading comprehension, $r(65) = .72, n = 67, p < .01$; and a strong positive correlation between reading rate and reading comprehension $r(65) = .82, n = 67, p < .01$. Similarly, there was also a strong positive correlation between reading prosody and reading comprehension $r(65) = .86, n = 67, p < .01$.

TABLE 5. Correlation between accuracy, reading rate, prosody and comprehension

	Reading Comprehension
Reading Accuracy	.72*
	.00
Reading Rate	.82*
	.00
Reading Prosody	.86*
	.00

* Correlation is significant at the .01 level (2-tailed)

The overall results showed that each component of fluency, namely reading accuracy, reading rate and prosody correlated strongly with reading comprehension. The result also revealed that prosody had the strongest relationship with reading comprehension, followed by reading rate and then reading accuracy. The overall results suggested that oral reading fluency had a significant relationship with reading comprehension and thus oral reading fluency can be used to provide a supplementary view of reading comprehension.

OTHER FINDINGS

In addition to the findings, additional observational data were also obtained. Content analysis of the observational data revealed the following themes.

TABLE 6. Observational reading patterns

Theme	Sub-theme	Example
Accuracy (Error patterns)	omission of /s/ in plural forms	a. 'Eyes' read as 'eye'. b. 'Hands' read as 'hand'. c. 'Faces' read as 'face'.
	past and present tense confusion or disregard of /ed/	a. 'Heard' read as 'hear'. b. 'Sat' read as 'sit'. c. 'Reached' read as 'reach'. d. 'Made' read as 'make'. e. 'Paid' read as 'pay'.
	Difficult to pronounce low frequency/unfamiliar word Difficult to pronounce multi- syllabic word/ lacking of phonic skills	a. Accompanied b. Experience a. Environment b. Sympathetically c. Secondary (Students read by guessing each syllable using their 1 st language especially using Malay syllable structure. For example, 'environment' is read as /ɛnvaɪ rən mɒnt/ instead of /ɛnvaɪ rən mɒnt/). Besides, 'sympathetically' is commonly mispronounced as Malay syllable does not consist of 'sym'

Prosodic	Inappropriate pause (/ indicates where they paused)	a. No pausing and fast pace. E.g. Late one afternoon while Leela was packing her bag she heard someone crying.
		b. Incorrect pausing. E.g. Leela put her arm around/ Aminah/ and said..... I reached/ school early that day....
	Monotonous/non-expressive	a. Flat tone when reading a question. E.g. "Are you alright?" b. Reading without emotion. E.g. "I feel hurt."

DISCUSSION, IMPLICATION AND RECOMMENDATION

The aim of this study was to examine the relationship of three fluency sub-skills and reading comprehension and then to propose the possible methods to assess fluency if a positive result is yielded. In relation to this, this study also examined the relationship between objective (reading accuracy and rate) and perceptual (reading prosody) ratings of fluency, and the relationship of these ratings with the scoring of reading comprehension. In particular, this study sought to examine whether the strong relationships between oral reading fluency and reading comprehension as reported for L1 readers could be duplicated in an ESL context in Malaysia. The result showed that perceptual rating scale (prosody) correlated strongly with objective rating scale (accuracy, $r = .89$ and reading rate, $r = .94$). In fact, reading rate was found to have a stronger relationship with prosody as compared to accuracy. This result is consistent with the findings by Lems (2005) which indicated that MDFS (prosody) behaved like the WCPM measure (reading rate). Courbron (2012) also found that reading speed and reading prosody were strongly correlated. He related this observation to LaBerge and Samuels' (1974) theory of automaticity which predicted that reading rate would increase as the prosodic elements of reading fluency increased, resulting in increased reading comprehension too (Courbron, 2012).

Second, the results showed that each component of fluency i.e. accuracy, reading rate and prosody had a strong relationship with reading comprehension. These findings were indeed in parallel with numerous empirical studies which often reported positive correlations between measures of fluency and comprehension. For instance, Kariuki and Baxter's (2011) results yielded a significant correlation ($r=.884$, $p=.01$) between prosodic oral reading, as measured by MDFS, and reading comprehension. Rasinski, Rikli and Johnston (2009) also stated that those who can read with greater prosody have a higher level of comprehension. Klauda and Guthrie (2008) also found that fifth-grade students (mixed participants of native and ESL learners) who demonstrated the highest performances in reading comprehension also displayed appropriate and consistent expression when reading stories aloud. The studies by Mustafa Yildiz et al. (2009) and Huang and Chen (2004) with EFL students also yielded similar result.

The strong relationships observed between reading accuracy, reading rate and reading prosody with comprehension are consistent with automaticity's theory which asserted that fast and accurate word recognition would provide more cognitive spaces for reading comprehension, and vice versa (LaBerge & Samuels, 1974). This notion basically suggests that when the decoding is automatic or quick, it allows readers to focus on meaning constructions. Therefore, it is predicted that less fluent readers are poor in grasping the meanings of what they read because they need to focus more on sounding out words or making guesses rather than comprehending the text (Hudson et al., 2009). The findings from this study added to support the notion that these relationships are also relevant in an ESL context.

Where reading in an ESL context is concerned, the analysis revealed that 76.1% of the students scored below .90 (90% accuracy) in their reading accuracy. Commonly mispronounced words were words in plural forms such as 'eyes' and 'hands', whereby the students did not sound out the 's' sound. Another common pattern was the mispronunciation of past tense words. The words were pronounced in the present tense form. For example, the word 'sat' was read as 'sit' by the majority of students. However, this does not indicate that the students could not comprehend the meanings of such words. This intentionally or unintentionally leaving off /s/ or /es/ or ignoring the tenses might suggest a fast and sloppy reading. The students might read so fast and carelessly that they missed the entire words (Gagen, 2007). Besides, this can also be due to the effect of L2 influence as the first languages of these readers do not have this type of linguistic pattern and thus they ignored these features. A limitation of this study was that sub-grouping of students according to their language proficiency levels was not conducted to reveal further information on their error patterns. It is hence recommended that future study could further scrutinize these relationships.

As revealed in the observational data, another error pattern that affected the readers' reading accuracy was misreading of low frequency words such as 'accompanied' and multi-syllable words like 'environment', 'experience' and 'sympathetically'. There are two possible reasons for this. The students could either lack phonemic awareness to decode those words correctly or they simply do not know the words. Another phenomenon observed was related to L1 effect. On such occasions, the students had the tendency to use their L1 knowledge to decode each word when reading aloud. As a result, the pronunciation of each syllable was much affected by their mother tongue. As mentioned by Gilbert (2008), foreign language learners who are used to different phonological rules may not hear the syllable division in the same way the natives do. In particular, he explained that learners from non-English language backgrounds typically face difficulties in processing consonant clusters. Consonant clusters are more commonly found in English than in other languages (Gilbert, 2008). Therefore, we observed that test of reading accuracy could help to identify and describe the learners' common patterns or errors quite precisely, and suitable instructional strategies can be taken after such an evaluation. The results suggest that oral reading can provide apparent observation into the students' reading performance and identify errors unique to ESL students.

Through the researcher's observation, it was noticed that good readers read with a high speed whereas poor readers struggle and read each word laboriously. Poor readers might need to attend words decoding process and constructing meaning at the same time, hence, delaying their speed in reading. Meanwhile, for efficient readers, they could automatically convert print to the correct sound and hence allow fast fluent reading (Gagen, 2007). Similarly, poor readers are not as prosodic in their oral reading as compared to the good readers. Poor readers were observed to inappropriately pause at a wrong place or had little sense of phrase boundaries. However, one noticeable pattern was that most students (except one or two participants) read in a monotonous and non-expressive tone. This phenomenon was also observed among students who scored high in comprehension. The reason could be that the students were used to silent reading during the early stage of reading and fluent reading skills especially reading with intonation were not emphasized. Such observation on students' oral reading actually suggested that there is a strong relationship between reading comprehension and the three components of reading fluency.

CONCLUSION

This research has shed light on the understanding of the relationships between the three components of fluency and reading comprehension in an ESL educational setting. More

extensive empirical and longitudinal studies are needed to clarify the role of fluency in ESL learning and its impact on comprehension growth. On top of that, future studies could also expand this study by investigating the causal relationship between fluency and comprehension. Although the reciprocal relationship between the two variables is fairly predictable, it is yet to be found whether fluency is the cause or the effect of comprehension. Finally, the present study only used narrative text type. Other research using expository texts or even poems can be carried out to determine the relationship of these variables.

In the context of teaching, it is hoped that the findings would inspire ESL teachers to use different sub-skills of oral reading fluency as an alternative assessment for reading, rather than to solely rely on reading comprehension. Assessing fluency is important as it provides a more holistic view of a student's overall reading competencies (National Reading Panel Report, 2000). By assessing fluency regularly, teachers can discover if students have decoding, syllabication or other word recognition problems which entail repeated instructions of those related skills (Palmer, 2010). However, to make use of oral reading assessment on a large scale in schools, one needs to make sure that the instrument used is valid to account for the variations seen in L1 and L2 readers (Lems, 2005). This study had provided initial validity evidence of the instruments used. However, more elaborated validation process is necessary for the instruments to be used in the larger context. Potentially, these instruments could also be automated in order to ease the teacher's job (e.g., Mostow & Duong, 2009).

Overall, the findings demonstrated that all three reading fluency components: accuracy, reading rate and prosody had a very strong relationship with reading comprehension among Form Two students in a Malaysian school sample. The findings need to be verified with a larger sample before it could be generalised for the population of Malaysia. In the meantime, the findings provide useful preliminary information for secondary teachers who wish to evaluate oral reading fluency and reading comprehension in their students. The study does not intend to suggest that reading fluency and comprehension are interchangeable measures. The study reiterates that a more broad assessment approach is justifiable. The use of different reading tasks such as reading fluency will be able to complement the commonly used reading comprehension measure. Fletcher (2006) once pointed out that "a one-dimensional attempt to assess reading comprehension is inherently imperfect" (p.324), so multiple measures are necessary to provide a full picture of students' performance on reading. In addition to that, the strong relationship between the three sub-skills of fluency and comprehension suggested that teachers could opt for any means to assess their students' reading fluency. The standard guideline as applied in this study would help to ensure a consistent evaluation of each student and to avoid bias during the school-based assessment.

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