Developing Students’ Reading Fluency by Using Timed-Repeated Reading: A Case Study in English Subject
Assumption College Ubonratchathani

Palita Na Songkhla

An Action Research Submitted in Partial Fulfillment of the Requirements for the Degree of Master of Management in Organization Development and Management
Faculty of Graduate School of Business
Assumption University
Academic Year 2016
Copyright of Assumption University
Developing Students' Reading Fluency by Using Timed- Repeated Reading:  
A Case Study in English Subject Assumption College Ubonratchathani.

An Action Research Submitted in Partial Fulfillment of the Requirements 
for the Degree of Master of Management 
in Organization Development and Management 
Faculty of Graduate School of Business 
Assumption University 
Academic Year 2016 
Copyright of Assumption University
**Action Research Title**  
Developing Students' Reading Fluency by Using Timed-Repeated Reading: A Case Study in English Subject Assumption College Ubonratchathani.

**By**  
Palita Na Songkhla

**Major**  
Master of Management in Organization Development and Management (MM.OD & M)

**Action Research Advisor**  
Marrisa L. Fernando, Ph.D.

**Academic Year**  
1/2016

---

The Graduate School/Faculty of Graduate School of Business, Assumption University, has approved this action research as a partial fulfillment of the requirements for the Degree of Master of Management in Organization Development and Management.

K. Phothikitti  
Dean of Graduate School of Business, Kitt Phothikitti, Ph. D.

**ACTION RESEARCH EXAMINATION COMMITTEE**

Sirichai Preudhikulpradab, Ph.D.  
Program Director

Vorapot Ruckthum, Ph. D.  
Chairman

Marrisa L. Fernando, Ph.D.  
Action Research Advisor

Rev. Bro. Prawat Suthinont, f.s.g., Ph.D.  
Committee

Sirichai Preudhikulpradab, Ph. D.  
Committee
Abstract

This research was aimed to study and analyze the current situation of students’ reading fluency in English subject. Instructional Development Intervention were designed and implemented. The IDI were timed-repeated reading for developing the students’ reading fluency in English. Lastly, it was also to evaluate the students’ reading fluency between before and after implementing IDI.

The population in this study was 40 students in the grade 6 level. The researcher spent 4 weeks to collect data. The data analysis was implemented by using statistical analysis tools such as mean, percentage, and t-test.

After implementation of IDI, the researcher found that students’ reading fluency was developed as the result IDI of pre and post IDI showed significant difference. The students’ reading fluency or word per minute after IDI was 69.94 from 55.18. The study reflected the result which approved that the IDI, timed-repeated reading, can develop students’ reading fluency.
Acknowledgment

There are so many thoughts in my mind which cannot be expressed to tell how grateful I am for these people who have supported and encouraged me to attain this achievement.

Firstly, thank you very much my parents who are always beside me, cheer me up, and bring the brighter future to my life when I was discouraged and unmotivated. You both are my sunshine, my love, and everything for me. I love you to the moon and back.

I would like to express my sincere gratitude to my advisor Dr. Marrisa Fernando for the continuous support of my study and research, for her patience, motivation, enthusiasm, and immersing knowledge. Her guidance helped me at all the time in the research and writing of this thesis. I could not have imagined having a better advisor for my master degree.

I would like to thank with my deepest gratitude to the Dr. Sirichai Preudhikulpradub and who spent his valuable time to check and give advice to me concerning IOC. I am also grateful to the members of my committee for their patience and support in overcoming numerous obstacles I have been facing through my research.

Thank you very much to Bro. Prawat Sutthinont., Ph.D who gave me the chance to develop my potential to grow not only the higher level of education but also the maturity of overcoming difficulties in life.

Last but not the least, thank you so much to Mr. Zachariah Ezung and Miss Nattaya Yasiasat who kindly gave me suggestions and advice on writing the English version.

Palita Na Songkhla
Table of Content

Abstract

Acknowledgement

Chapter 1 Introduction of the study

Background of the study ................................................................. 1
Organization Background ............................................................... 3
Research objectives ....................................................................... 8
Statement of problems and Research questions ............................ 8
Research Hypotheses ..................................................................... 9
Definition of Term ......................................................................... 9
Significance of the study ............................................................... 10
Scopes of research ....................................................................... 10
Limitations of the research ........................................................... 11

Chapter 2 Literature Review

Reading Fluency ............................................................................ 12
Reading Fluency Assessment .......................................................... 18
Related research ............................................................................ 22
Conceptual Framework ................................................................... 23
Action Research Framework ........................................................... 24

Chapter 3 Methodology

Research Design ............................................................................ 25
Population and Sampling ............................................................... 28
Research Instrument ..................................................................... 29
Data Analysis ................................................................................ 31
Data Collection and Timeframe of the study .................................. 31
Chapter 4 Result and Discussion

Description of population ............................................................... 34
Pre Instructional Development Intervention's Result ......................... 34
Results of Instructional Development Intervention .......................... 38
Post Instructional Development Intervention Result ....................... 44
Hypothesis Testing.............................................................................. 47

Chapter 5 Summary, conclusion, recommendation

Summary of the Findings................................................................. 50
Conclusion ....................................................................................... 51
Recommendations............................................................................... 52

Bibliography

Appendix
List of tables

Table 1: Chall’s Stages of Reading Development ................................................................. 14
Table 2: Hudson Reading Fluency Assessment .................................................................... 18
Table 3: Procedural Diagram .............................................................................................. 25
Table 4: Data Collection Tools .......................................................................................... 28
Table 5: Target Participants ............................................................................................... 28
Table 6: Validity of Prosody Observation Form .................................................................. 30
Table 7: Validity of Pretest- Posttest ................................................................................. 31
Table 8: Validity of Passage in Timed- Repeated Reading Development set ................. 31
Table 9: Data Collection and Timeframe of the study ....................................................... 32
Table 10: The percentage of students participated in the IDI process ......................... 34
Table 11: Average Automaticity of Pre-Test ...................................................................... 35
Table 12: Accuracy of Pre-Test ......................................................................................... 36
Table 13: Prosody of Pre-Test ........................................................................................... 37
Table 14: Number of words in each level by type of sounds ........................................ 40
Table 15: The average repeated reading per passage and average number of passage read within 4 weeks ........................................................................................................... 41
Table 16: Word per minute progress in 4 weeks .............................................................. 42
Table 17: Average Automaticity of Post-Test ................................................................... 45
List of tables

Table 18: Average Accuracy of Post-Test ................................................................. 45

Table 19: Prosody of Post-Test ............................................................................... 46

Table 20: The Comparison of the Reading Fluency in Pre-test and Post-Test ....... 47

Table 21: T-Test Results ........................................................................................ 48

Table 22: Comparison of Results between Pre and Post Test .............................. 50
List of Figures

Figure 1: SWOT Analysis.................................................................................6

Figure 2: Fish Bone Analysis.........................................................................7

Figure 3: Ehri’s phrase of word development.............................................16

Figure 4: Elements of Reading Fluency Triangle.......................................17

Figure 5: Conceptual Framework ...............................................................23

Figure 6: Action Research Frameworks.......................................................24

Figure 7: Calculation formula of Word per Minute.....................................35

Figure 8: Ehri’s Phase of Word Recognition Development........................39

Figure 9: Progress of accuracy development.............................................43

Figure 10: Overall Progress of Word per Minute Week 1 to Week 4........44
Chapter 1

Introduction

In this chapter, the researcher described the background of how the study was established. This chapter presents the problems and background to convey the study. Moreover, the researcher also analyzed some of the problems which caused students to have weak reading fluency.

1.1 Background of the study

Reading fluency is the capability of students to read fast and easily to understand the texts. In order to do that the students must be able to read and comprehend the words automatically and accurately. Reading fluency is considered the most important factor to develop students’ reading skills (Wright, 2013). Not only does it differentiate good readers from poor, but it also indicates the problems concerning to reading comprehension (Stanovich, 1999).

According Oakley (2003) stated the ideas of Rasinskid (2000) that teaching reading fluency has many advantages. Firstly, it tends to make students have positive attitude toward reading. Moreover, the ability has significant relationship with alphabet writing (Hwang J. K., 2015).

Therefore, the results mentioned above have indicated that reading fluency have benefit in terms of the capability to enhance students to learn more. Additionally, the students who are able to read fluently can be a role model and help other students to practice reading to be more fluent and effective.
1.1.1 Global context

Reading fluency plays an important role in language strategy. In native English speaking countries such as America, Australia, and England, students are trained to read and recognizing words and sound since they are in kindergarten (Logdon, 2014). Fluent readers have advantage in understand text better and can focus more (English language art, 2015) while the slow readers are struggle in understanding the text. In America many teachers provide instruction by give phonic knowledge to children (Marz et al, 2013). Moreover, there are many techniques used to develop students reading fluency. Most of the time teachers like to work on reading theatre to develop reading accuracy and prosody (Marz et al, 2013). There reading fluency, especially, reading rate has some relevant to student’s compression for both simple and complex text (Torgesen, & Hudson, 2006). There are intensive researches on this topic in Europe and America. The purpose of most of the research tends to find relation of instruction and assessment that most effective in developing students’ reading fluency.

1.1.2 Regional Context and national context

In Asia, reading fluency teaching is quite different from those of America and Europe. Theron Muller et al. (2014) pointed out that English as Foreign Language context lack of language fluency can lead to low motivation to learn other language as well as lack of self-confident. Moreover, it may lead to limitation in productive skills (Theron et al, 20014). English proficiency including reading skills in Asia is considerably low when compared it with Europe and Latin America. In ASEAN, Malaysia and Singapore have the highest percentage of people who can speak English (Office of Education Council, 2014).
Thailand is among the countries with low English proficiency in Asia (Office of Education Council, 2014).

In Thailand, there has not been any study of on how reading fluency have been developed. Currently, Thai students are taught by whole language method. The whole language method focuses on memorizing vocabularies and guessing the meaning of the words which is not an effectively strategy to learn other language and thus fail to improve sound comprehension. As the result, Thai people cannot speak English clearly. Moreover, their comprehension of English language is considered low Tinnawong (2010) indicated that the reasons behind this failure were students lacks of interest to read and practice of reading comprehension. Moreover, she also cited Somkane (2007) who stated that this problem resulted from teaching techniques and that stories provided by the teachers were not interesting.

1.2 Organization Background

1.2.1 School profile

1.2.1.1 Organizational Mission, Vision, Goal

*The school:* to develop learners to be in world class standard, organize the classes to meet FSG criteria, foster learners to have responsibility to society and develop themselves in every dimension, promote students to a higher level of English proficiency, develop students to join external competition, develop management system to be more effective and efficient, and contribute the relationship with educational network.

*The school’s vision:* is “ACU students are full of self-discipline and meet world standard.
The school's goal: to meet world class standard level in every area for students, teacher, and management system.

Type of service

Assumption Ubonratchathani College is located in Ubonratchathani. It has been established for fifty-eight years since 1968. The service provided is educational service which aims to differentiate its students to have higher standard in English proficiency. The school is famous for its unique in language teaching especially English. Moreover, the school aims to distribute higher standard in technology and develop students to have skills in various field such as science, computer, and etc.

Indicator (KPI)

The KPI of IEP (Intensive English Program) department consists of thirty items measuring four areas: quality of learners, quality of teachers, quality of measurement and assessment, and quality of learning management process. These indicators are important to identify the management of classroom and ability students should gain and develop. The target percentage of quality is approximately eighty percent in all areas. The major area to be focus is the quality of learning management process which consists of nine items. The total number of items to be measured is twenty-four items. The ability of students to read is one of the items to be developed in all class level counting from primary one to primary six. Due to the fact that, reading ability is lead to better compression, therefore, this capability is determined to be one of the most important skill should be developed since an early age.
1.2.2 Analysis of the problem and current situation

As the school differentiates itself to be the leader for higher standard of English proficiency, English is considered the main strength for the school. However, the author, as one of English teachers, found that English proficiency in primary level was not really satisfying. The students’ English level is considered poor except for EBP students who have higher skills in English. The author found that the two thirds of the students who participate in the classes which the author teaches cannot read properly. Some students are struggling and lead them to poor comprehension in English.

Normally, the problem of ineffective reading or language proficiency is influenced by left brain development. According to Davidson (1992), the left brain is used in logical thinking and people use the left brain more than right brain. In contrast, right brain is used to develop creative thinking skills. In this case, to improve English reading fluency, it is quite clear that the development should be based on left brain analysis. The researcher needs to look into the technique and practice that enable teachers to develop students reading fluency. The analysis by using the left-right brain could possibly provide some insight for the author to get the full detain to apply in development process.
According to SWOT Analysis as shown in Figure 1, the school has its strength in accessibility of internet as well as support from parents. Moreover, teachers have high skills and there are sufficient native English speakers. However, there are a number of weaknesses. The first weakness to point out is that the students are not taught proper reading; therefore, they have low reading fluency. The threats that may cause problems to the school are some activities which may affect to teaching process and make the teaching activities become less effective such as urgent meeting, special events that the school needs to stop teaching, and etc. The opportunity is that this subject of fluency development can
be applied to other field which will benefit to students to gain more knowledge. The students can applied their skills on reading fluency to understand better English, and communicate more effectively.

**Diagnosing tool**

There are many types of diagnosing tool that can be used in this study such as fishbone, 5 whys, prioritization, force field analysis, and etc. However, in this study, the author decided to use fish analysis. The analyze of current problem is as following:

![Fish Bone Analysis Diagram]

**Figure 2: Fish Bone Analysis**

The fishbone diagram was applied to this study due to the fact that it could analyze causes and effect of problems (WBI Evaluation Group, 2007). It is said to provide discussions of potential causes and problems. It can give easy methods to analyze problems and provide big pictures of issues (WBI Evaluation Group, 2007).
The fishbone diagram as shown in Figure 2, shows that there are four factors contributing to low reading fluency. The first factor is the teaching process. The teaching process is considered discontinuous because there are some activities disturbing teaching process. The result of this causes ineffective teaching. The ineffective teaching also refers to the appropriateness of teaching-learning activities for students in different ages. Second factor is different of reading skills for each student which makes it difficult to read. Another factor is also important that is the reading development plan. There are no proper development plans; the plan the focus on reading fluency development, the school. Therefore, the students are not developed to have these skills accurately. Lastly, the contents taught to students are unmatched to students’ ability to read. The reading development or practice tends to focus more on reading comprehension rather reading fluency.

1.3 Research objectives

1. To analyze the current situation of students’ reading fluency in English subject
2. To design and implement timed-repeated reading as Instruction Development Intervention (IDI) for developing the students’ reading fluency for English subject
3. To evaluate the students’ reading fluency between before and after implementing IDI

1.4 Statement of problems and Research questions

The focus of the study is to develop students’ reading fluency by using IDI as an interventional strategy.
In order to do that these important questions need to be answered, the questions are:

1. What are the current situations of the students’ reading fluency in English subject?
2. What IDI can be designed and implemented to develop students’ reading fluency?
3. What are the differences of the students’ ability to read before and after IDI?

1.5 Research Hypotheses

H10: There is no significant difference of IDI on students’ reading fluency before and after implementing IDI.

H1a: There is difference on students’ reading fluency before and after IDI.

1.6 Definitions of Terms

**Reading fluency**  The ability to read phrases and sentences smoothly and quickly, while understanding them as expressions of complete ideas.

**Time-repeated reading**  This is the method of assessment that is done by having students read certain texts under the time limiting.

**Prosody**  The intonation of speaker when speak a words or phrases or sentences with specific stress according to their feeling.

**Accuracy**  The ability to decode words correctly.

**Automaticity**  The ability to read effortlessly.
**Instructional Development Intervention (IDI)** The principal learning processes in the "action" stage of organization development is structured activities used individually or in the combination to improve their students’ skills.

**Pre IDI**

The phase before implementation of IDI

**Post IDI**

The phase after implementation of IDI

1.7 **Significance of the study**

This research analyzed the current situation of students’ reading fluency in English subject as well as design and implement timed-repeated reading as IDI to develop students’ reading fluency for English subject. Moreover, it aimed to identify the impacts of IDI on students’ reading fluency for English subject which would be fruitful for future research. Additionally, English teachers or English department could use the results and findings of this study to plan the reading development from the early age.

1.8 **Scopes and contents of the study**

This study aimed to determine the current situation of students’ reading fluency in English subject. The researcher emphasized on the process of reading fluency development which included instruction, assessment, and evaluation process. The sampling involving in this research were forty students from Pratom six. The research data collection was done in Assumption College Ubon Ratchathani. Moreover, the researcher also analyzed what could be the most appropriate IDI program to teach the students in this age, and the impact of the IDI program on students’ reading fluency.
1.9 Limitations of the research

The sample group in this research was Pratom 6/3 and 6/4, accounting for 40 students. The students are 2 classes in 6/3 students with 21 students and 6/4 students with 19 students, therefore, the population of this study are 40 students in total. The study was investigated and process during January to August 2016.
Chapter 2

Literature Reviews

In this chapter, the researcher reviewed literature that related to the topic of the study that was “developing students’ reading fluency by using time - repeated reading”. Therefore, the following topic had been investigated in order to construct the research conceptual framework; reading fluency development, timed- repeated reading, and related Research

2.1 Reading Fluency

2.1.1 Reading Fluency Definition

The definition of reading fluency, given by Ann Logdon, Learning Diability Expert, is “the ability to read phrases and sentences smoothly and quickly, while understanding them as expressions of complete ideas” (Logdon, 2014). According to The Literacy Dictionary: The Vocabulary of Reading and Writing, cited by Helen and Jess (2005), “reading fluency is freedom from word identification problems that might hinder in silent, or expression of ideas in oral reading; automaticity”. Another definition given by Harris and Hodge (Cited by Hudson, 2005) is that reading fluency is a tool which can help people to understand and acknowledge readers if she/he can understand the text read.
2.1.2 Reading Fluency Theory

Reading Fluency Development Theories

There are various theories on reading fluency development. However, in this paper, the author mentioned 3 theories which are Chall’s (1983) model of reading development, Ehri’s (2004) phases of words development, and Seymore and Duncan (2003) reading development.

1. Chall’s model of sight word development

According Rockos et al (2009) Chall’s model of sight word development has 6 stages. The first stage is called “stage 0”. This is a pre-reading (pseudo reading) when kids starting from 6 months to 6 years pretend to read or retell story. “Stage 1” is initial reading and decoding which normally started with the kids who are 6-7 years old or 1st grade and beginning 2nd grade. In this stage child learns the relation of words, letters, and sounds of written and spoken words, phrases, and sentences. Next stage is called “stage 2”: Confirmation and fluency. Children who are 7-8 years old are in this group. In this stage, children are able to read simple or familiar stories, and ready to improve to gain language proficiency. On “stage 3, reading for learning the new, children between 9-13 years old usually read to learn new ideas, knowledge, search for new feelings, and gain new attitude from one point of view. This stage consists of two phases; phase one is for intermediate 4th and 6th and phase B I for Junior high school 7th – 9th. “Stage 4”, multiple view point, is included by children at the age of 15-17 years old or grade 10th -12th grade. At this age children are able to read more broadly and complex. Last stage “Stage 5”, construction
and reconstruction, is the stage when children read for their own needs. It is usually starts with people at the age of 18 and above.

### Table 1.: Chall’s Stages of Reading Development (Roskos et al, 2009)

<table>
<thead>
<tr>
<th>Stage</th>
<th>Name</th>
<th>The Learner</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stage 0: Birth t Grade 1</td>
<td>Emergency Literacy</td>
<td>Gains control of oral language; relies heavily on pictures in text; pretends to read; recognizes rhyme</td>
</tr>
<tr>
<td>Stage 1: Beginning Grade 1</td>
<td>Decoding</td>
<td>Grows aware of sound/symbol relationships; focuses on printed symbols; attempts to break code of print; uses decoding to figure out words</td>
</tr>
<tr>
<td>Stage 2: End of Grade 1 to End of Grade 3</td>
<td>Confirmation and Fluency</td>
<td>Develops fluency in reading; recognizes patterns in words; checks for meaning and sense; know a stock of sight words</td>
</tr>
<tr>
<td>Stage 3: Grade 4 to Grade 8</td>
<td>Learning the New (Single Viewpoints)</td>
<td>Uses reading as a tool for learning; applies reading strategies; expands reading vocabulary, comprehends from a singular point of view</td>
</tr>
<tr>
<td>Stage 4: Secondary and Early Higher Education</td>
<td>Multiple Viewpoint</td>
<td>Analyzes what is read; reacts critically to texts; deals with layers of facts and concepts; comprehends from multiple points of view</td>
</tr>
</tbody>
</table>
2. Ehri’s 2004 phases of sight word development

Ehri’s phases of sight word development (2004) consisted of four phases; pre-alphabetic, partial alphabetic, full alphabetic, and consolidated alphabetic (automaticity). In the Pre-alphabetic phase, children can read words by remembering visual or contextual clue. Children’ reading skills will shift to next phase if they can remember and connect words with the memorial phrase or words they have learnt. In the Partial alphabetic phase, children recognize most letters’ name and could read words out of context. They are ready to move to next phase when they have sufficient coding skill and knowledge to be used in spelling to pronunciation in memory. In the Full alphabetic phase, children are able to decode new words. They can connect graphemes in spelling and the phonemes in pronunciation to remember how to read words. In the Consolidated alphabetic phase, children are able to blends various form of complex words including root words and affix, onset and rhyme (2004).
3. Seymour and Duncan reading development

In 2003, Seymour and Duncan developed a theory on reading development which consisted of four phases. Phases one is the process which children recognize sounds and letter. Phase one is the step which is called foundation literacy (sight words identification logographic process). Children are able to read common words or another word called decoding. Phase three is orthographic level. According to Seymour et al. (2003) orthographic level as following “the orthographic level is envisaged as a structure in which the legitimate orthographic forms of monosyllables are represented”. Phase four is
morphographic level. In this level, students can combine syllable-sized segment can be combines to establish complex multi-syllabic words (2003).

2.1.3 Element of Reading Fluency

Reading fluency is an essential skill to English proficiency. There was a study of 1,779 fourth-grade students on their reading fluency. The result found that 40 percent cannot read. Moreover, the study showed correlation between reading fluency and comprehension. Additionally, this research also indicated that reading fluency is a key factor to overall reading ability (Begeny, 2003-2009). Begeny (2003-2009) pointed out the reasons why reading fluency become important as following: “improving reading fluency is necessary to improve reading comprehension, and fluent readers are more likely to choose to read.” (Begeny, 2003)

Hudson et al. (2005) stated there were three important elements: accuracy, rate, and prosody. In order to increase reading fluency, these three factors must be considered and developed (Hudson et al., 2005). Cathy (2015) noted that elements of reading fluency starting from accuracy (the ability in decoding words) to development of automaticity or reading effortlessly, and lastly to prosody or expressiveness.

![Figure 4: Elements of Reading Fluency Triangle](Hudson et al.,2005)
2.2 Reading Fluency Assessment

Hudson (2005) cited that “Teachers observing students’ oral reading fluency should consider each critical aspect of fluent reading: word-reading accuracy, rate, and prosody”. They pointed out various methods for assessing reading fluency in term of accuracy and rates as show on table 1. Moreover, prosody assessment can be effectively assessed by observation.

Table 2: Hudson’s Reading Fluency Assessment (Hudson, 2005)

<table>
<thead>
<tr>
<th>Assessment</th>
<th>Publisher</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>AIMSweb Standard Reading Assessment Passages (RAPs)</td>
<td>Education</td>
<td>AIMSweb RAPs provide teachers with passages for quick but accurate formative assessment of students’ oral reading fluency. These assessments are a Curriculum Based Measurement (CBM) system that is intended to assist teachers in making instructional decisions and monitoring student progress. RAPs have been field-tested and validated. The AIMSweb system includes a Web-based software management system for data collection and reporting.</td>
</tr>
<tr>
<td>Dynamic Indicators of Basic Early Literacy Skills (DIBELS)</td>
<td>University of Oregon and Sopris West</td>
<td>DIBELS contains a subtest of Oral Reading Fluency and Retell Fluency for students in the first through third grades. The Oral Reading Fluency is standardized and individually administered. Students read a passage aloud for one minute. The number of correct words per minute is determined to provide the oral reading fluency rate. The Retell Fluency is a measure of comprehension that accompanies the Oral Reading Fluency assessment.</td>
</tr>
<tr>
<td>Gray Oral Reading Test, Fourth Edition (GORT-4)</td>
<td>PRO-ED</td>
<td>The GORT-4 is a norm-referenced measure of oral reading performance. SLLs assessed include rate, accuracy, fluency (rate and accuracy combined), comprehension, and overall reading ability (rate, accuracy, and comprehension combined).</td>
</tr>
<tr>
<td>National Assessment of Educational Progress (NAEP) Fluency Scale</td>
<td>National Center for Education Statistics (NCES)</td>
<td>The NAEP Fluency Scale provides a descriptive guide for oral reading performance based on the student’s “naturalness” of reading. The student’s performance is rated on a four-point scale, with emphasis placed on phrasing of words, adherence to syntax, and expressiveness (Pinnelli et al., 1995). Accuracy and rate are measured and determined by calculating the correct words read per minute.</td>
</tr>
<tr>
<td>Reading Fluency Monitor by Read Naturally</td>
<td>Read Naturally</td>
<td>The Reading Fluency Monitor is an assessment instrument that allows teachers to monitor student progress. Fall, winter, and spring administrations are recommended. Grade-level passages are available for grades 1-8, as well as a software program for reporting and record keeping.</td>
</tr>
</tbody>
</table>
Timothy (2004) mentioned that “Reading fluency assessment is the ability to measure students’ level of achievement in fluency and monitor their progress is the key to successful fluency teaching”. He emphasized that reading fluency assessment must consist of reliability and validity, and efficiency in administration, scoring, and interpretation (2004).

**Timed Reading Assessment**

Timed reading is a common reading fluency assessment. This method of assessment is done by having students read certain text under the time limiting (Anna, 2012). For assessing the Timed Reading Assessment, teacher will give students limit of time to read certain words or passages which primarily assesses the reading rate. The teacher listens to the read-aloud and stops the student’s reading after the time limit, then count the number of words read correctly in that minute is the assessment score result. (Anna, 2012)

Timed Reading was developed by Samuel cited by Hudson (2005) in the Method of Repeated Reading. Hudson et al. (2005) pointed out process of time reading as following:

1. Record the rate of students’ reading to be used to compare if students are developed effectively in reading fluency

2. Write down error students make in order to correct with them personally later.

3. Challenge student to read five or six more words. If it is possible, try to pursue them to read for one more line depends on students’ ability for the next time of
reading instruction. For example, try to ask student to decrease the errors as less as possible.

4. Note the target CWPM (Correct word per minute)

5. Time the student again for one minute and record the CWPM and errors.

6. Show the students of the mistakes and errors they have made.

7. The frequency of timing can be at least 3 times per week or more for some students who are really struggle.

8. Make students read a new passage whenever their CWPM does not increase.

9. Select a new passage when the students meet requirements.

10. Students can do the records by their own after getting familiar with the process.

**Reading Prosody Observation**

According to Gibson (2005), prosody means the intonation of speaker when speak a words or phrases or sentences with specific stress according to their feeling. Gibson (2005) also pointed out the prosodic features are pitch, stress, and timing. Hudson (2005) had mentioned the checklist to be observed when doing reading prosody assessment as following:

1. Words that are pronounced must stress appropriately.

2. The intonation of students’ tone is matched with the text.
3. Students stop when they have to stop correctly to show the punctuation in the text (e.g. question rise at the end).

4. The students can transfer the right feeling when reading the text.

5. Students use punctuation correctly and stop when they have to.

6. Students know when to use prepositional phrases and when they should stop reading.

7. Students apply the knowledge of the subject–verb correctly and stop when it is appropriate.

8. Student apply the knowledge of conjunction correctly and stop when it need to.

**Reading Fluency Instructional Methods**

*Timed Repeated Reading with Record*

Timed repeated reading with record is one process that developed to improve students reading fluency in accuracy and rate (Reading Rocket, 2014). In this method, students have to re-read one text 3-4 times with record to measure their progress. According to literature reviews (Wright J., 2008), time repeated reading with record have the procedures as following;

1. Be with the students in appropriate place and hand out the passage to the student

2. The passage should be 100-200 in length.

3. Ask the students to read the text and record the reading.
4. The teacher helps the students become struggle to read words within 5 seconds. The teacher may give definitions of the words.

5. Ask the students to read the passage again when they finish reading. If the students' rate of reading exceeds 85 percent, change the passage to the more difficult level.

2.3 Related research

One of the related researches is "Oral Reading Fluency Development for Children with Emotional Disturbance or Learning Disabilities" (Wanzak et al., 2003). This study was aimed to examine oral reading fluency of students with emotional turbulence and learning disability. The researchers applied a piecewise model to each grade and discovered that the students without disabilities had better results than those with disabilities.

Another research is Modeling Oral Reading Fluency Development in Latino Students: A Longitudinal Study Across Second and Third Grade by Al O (2009). The researchers aimed to determine the growth in oral reading fluency among students of three groups: students with English proficiency, ESL students, and normal students. The researchers applied the hierarchy linear modelling to compare the result of three groups. The results showed that the students have positive development toward the instruction of reading fluency.

According to Chang (2013) who had studied on the topic of improving reading rates and comprehension through timed repeated reading. She did her research with 13 students who practiced their reading with 26 passages. The results of this study showed that the students had better results of reading which were increased 47 words and 45 words per
minutes. While students who hadn’t been intervened with the passage had only 7-13 words increased only.

On the article “comparison of the effects of timed repeated oral reading of partner reading versus independent reading groups on reading fluency of young Korean EFL learners by Jennifer & Lee.(2015). The research presented the effects of timed repeated oral reading of partner reading and independent reading groups, the research found that there were relationship between reading rates, comprehension and accuracy. The results of this study showed that EFL learners had better reading fluency skills after the intervention.

2.4 Conceptual Framework

![Figure 5 Conceptual Framework](image)

The conceptual framework of this research shows with the independent variables and dependent variables. The independent variable in this study was the timed-repeated reading. The students’ reading fluency consisted of three elements that were accuracy,
automaticity, and prosody. Therefore, therefore the researcher's aim was to develop these three skills to better fluency of students.

2.5 Action Research Framework

According to the figure 6, the research framework consisted of three phases. The first phase was pre-IDI, this phase was to analyze the students’ reading fluency. The research discovered that the problems and current situation of students’ reading fluency. The IDI was to improve students’ reading fluency. This phase started to design timed-repeated reading set for students to read and gave to students reading practices as well as collected data to analyze. The last phase, post-IDI, was to compare the results of pre and post IDI to make conclusion of the research.
Chapter 3

Methodology

In this chapter, the researcher proposed the research design which consisted of four phases; preliminary, preIDI, IDI, and Post IDI. Each of these phases was aimed to answer research questions. This chapter also provided information on the population and sampling, and research instruments.

3.1 Research Design

Table 3: Procedural Diagram

<table>
<thead>
<tr>
<th>Phase</th>
<th>Research Question</th>
<th>Procedure</th>
<th>OUTPUT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preliminary</td>
<td>RQ1</td>
<td>- Review literature on improving students’ reading fluency skills</td>
<td>Related theories on reading fluency</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Design methodology</td>
<td>Research Instrument</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Design Research Instrument (pre/post-timed-repeated reading development set, prosody observation form)</td>
<td>(pre-post timed-repeated reading</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Design Research</td>
<td>development set, prosody</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Design Research</td>
<td>observation form)</td>
</tr>
<tr>
<td>Pre-IDI</td>
<td>Pre-test (Reading fluency; accuracy, automaticity, prosody)</td>
<td>• Result of students reading fluency before IDI</td>
<td></td>
</tr>
<tr>
<td>---------</td>
<td>----------------------------------------------------------</td>
<td>--------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>IDI</td>
<td>RQ2</td>
<td>• Prepare IDI (students’ Reading Fluency Classification)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Timed-Repeated Reading Instruction</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Students’ Reading Fluency Progress Evaluation</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Students’ reading development on accuracy, prosody, and automaticity</td>
<td></td>
</tr>
<tr>
<td>Post-IDI</td>
<td>RQ3</td>
<td>• Post-test (Reading Fluency; accuracy, automaticity, prosody)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Evaluation and Reflection of Students’ reading Fluency</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Results of students’ reading fluency after IDI</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Reflection of students reading fluency</td>
<td></td>
</tr>
</tbody>
</table>
Phase I: Data Acquiring Preliminary Data and Pre-IDI

In this step, the researcher studied review literature from previous studies in order to gain insight of how reading fluency can be developed. Later, the researcher designed methodology to apply as IDI. The researcher then designed and the instruments to test students, timed-repeated reading development set, and prosody observation form. Lastly in this step, the students were given pre-test to test their reading fluency before implementing IDI.

Phase II: IDI’s Implementation

IDI’s implementation is a process where timed-repeated reading is applied. The teacher categorized students according to their reading fluency level that have been tested in previous step. The researcher applied IDI’s instrument that is timed- repeated reading set with the students to develop their reading fluency skills in 3 areas; accuracy, automaticity, and prosody. The researcher then evaluated the students’ progress from time to time. The reading fluency set consisted of 4 sets of reading from easy words to complicated words.

Phase III: IDI’s Evaluation

After the all students passed all 4 levels, the students were given post-test to evaluate their reading fluency development before and after implementation of IDI. The researcher compared the results and got implications of the study. Then the researcher reflected those outcomes and to presents and write a research’s report.
Data collection tools:

Table 4: Data Collection Tools

<table>
<thead>
<tr>
<th>Pre-IDI</th>
<th>IDI</th>
<th>Post-IDI</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Pre-test</td>
<td>• Post-test</td>
<td></td>
</tr>
<tr>
<td>(Assessment on Students Reading Fluency: Accuracy,</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rate, and Prosody)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Prosody</td>
<td>• Timed-Repeated</td>
<td></td>
</tr>
<tr>
<td>Observation form</td>
<td>Reading Development Set</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

3.2 Population and Sampling

The sample group in this research were selected purposively sampling method which included students of Pratom 6/3 and 6/4 totally for 40 students. The students from 6/3 students accounted for 21 students and 6/4 students accounted for 19 students.

Table 5: Target Participants

<table>
<thead>
<tr>
<th>Target Participants</th>
<th>Number of participant</th>
<th>Stage of Involvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class 6/3</td>
<td>21</td>
<td>Pre-IDI, IDI, Post-IDI</td>
</tr>
<tr>
<td>Class 6/4</td>
<td>19</td>
<td>Pre-IDI, IDI, Post-IDI</td>
</tr>
<tr>
<td>Total</td>
<td>40</td>
<td></td>
</tr>
</tbody>
</table>
3.3 Research Instruments

1. Timed-repeated reading set

There were 4 sets of timed-repeated reading set. Each set contained 2 reading passages. The passages are between 200-300 words. Students were given a passage each day to read. The teacher timed the students without informing. Each student had one minute to read. The teacher counted the words students struggled to read and records them on the chart. After that the teacher discussed the words students cannot read fluently. The minimum requirement for words inaccuracy was 5 words. If the students 95 percent of right reading, they can take another passage.

2. Prosody Observation forms

The prosody observation form consisted of items. The teacher evaluated students’ performance.

3. Pretest and Posttest

Pretest and posttest was applied to measure students’ reading fluency skills before and after IDI to measure students reading ability.

Test of Validity and reliability of Research Instrument

The test’s validity of the research instrument was done by my three experts who are involving in English teaching. The purposes of the validity test are to provide correctness of language used in the instruments, to determine the appropriateness, and to determine the contents weather they relate to the aims of the study.
The results of the IOC test were as following:

- Prosody Observation Forms is 0.79 which is acceptable.
- Pre-test/Post-test is 0.89 which is acceptable.
- Passages in Timed-Repeated Reading Development Set were 1 which is acceptable.

The validity of prosody observation form was calculated by the following criteria:

Index of Item Objective Congruence (IOC)

The criteria are as follows:

+ 1 means the question is congruent with the objectives
0 means the question is uncertain to be congruent with the objectives
- 1 means the question is not congruent with the objectives

The acceptance of IOC were minimized of 0.5

After the three experts finished examining the IDI tools the researcher adding the IOC given by the three experts and considered the means of each item. The results were following:

Table 6: Validity of Prosody Observation Form

<table>
<thead>
<tr>
<th>No. Of Items</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>Validity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average</td>
<td>1</td>
<td>0.67</td>
<td>1</td>
<td>0.67</td>
<td>1</td>
<td>1</td>
<td>0.33</td>
<td>0.67</td>
<td>0.79</td>
</tr>
<tr>
<td>Interpretation</td>
<td>Acceptable</td>
<td>Acceptable</td>
<td>Acceptable</td>
<td>Acceptable</td>
<td>Acceptable</td>
<td>Acceptable</td>
<td>Revised</td>
<td>Acceptable</td>
<td>Acceptable</td>
</tr>
</tbody>
</table>
According to the minimum acceptance were 0.5 therefore item number seven was dismissed.

Table 7: Validity of Pretest-Posttest

<table>
<thead>
<tr>
<th>No. Of Items</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>Validity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average</td>
<td>1</td>
<td>0.67</td>
<td>1</td>
<td>0.89</td>
</tr>
<tr>
<td>Interpretation</td>
<td>Acceptable</td>
<td>Acceptable</td>
<td>Acceptable</td>
<td>Acceptable</td>
</tr>
</tbody>
</table>

Table 8: Validity of Passages in Timed-Repeated Reading Development Set

<table>
<thead>
<tr>
<th>No. Of Items</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>Validity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Interpretation</td>
<td>Acceptable</td>
<td>Acceptable</td>
<td>Acceptable</td>
<td>Acceptable</td>
</tr>
</tbody>
</table>

3.4 Data Analysis

The data analyses applied in this research include;

1. Descriptive statistics (mean, frequency, percentage)

2. Comparison of T-Test for pre-test and post-test in term of mean, t value, and p value

3.5 Data Collection and Timeframe of the study

The process of this study and the timeframe was presented as shown in
Table 9: Data Collection and Timeframe of the study

<table>
<thead>
<tr>
<th>Process</th>
<th>Process Duration January-August</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Jan-Mar</td>
</tr>
<tr>
<td>Presentation Chapter 1-3</td>
<td></td>
</tr>
<tr>
<td>Research Design</td>
<td></td>
</tr>
<tr>
<td>Data Collection</td>
<td></td>
</tr>
<tr>
<td>Data Analysis and</td>
<td></td>
</tr>
<tr>
<td>Chapter 4-5 Presentation</td>
<td></td>
</tr>
<tr>
<td>Final Paper Submit</td>
<td></td>
</tr>
</tbody>
</table>
Chapter 4

Results and Discussion

In this chapter, the researcher presents the results of the research findings. The chapter is divided into three parts. Part one is the result of Pre the Instructional Development Intervention. Part two describes the result of instructional development intervention. Part three is about the Post Instructional Development Intervention.

The data analysis was determined by using mean, percentages, and average of the data attained from students. The researcher divided the process into three steps in order to link with research questions. The research questions;

1. What are the current situations of the students’ reading fluency in English subject?

2. What IDI can be designed and implemented to develop students’ reading fluency?

3. What are the differences of the students’ ability to read before and after IDI?

The findings of the research can be explained and answered these questions. The researcher started the process of IDI by giving students fluency assessment (pre-test). Later, the development of students reading fluency was preceded by timed-repeated reading during a period of 4 weeks. Each student had to read two passages per week and the standard was they had to pass at least 50 percent of correct word read within one minute. If they could not meet the criteria, they had to reread that passage again. The students also had to read the whole passage to time their automaticity. The last step was to give the
student the reading assessment (post-test) again and analyze the result by comparing the data with the pre-test to find the difference and answer the third research question.

4.1 Description of Population

In this research, the population composed of students from two classes, class 6/3 and 6/4. The number of the population is shown in table 10.

<table>
<thead>
<tr>
<th>Class</th>
<th>Number of Students</th>
<th>Percentage of Participation</th>
</tr>
</thead>
<tbody>
<tr>
<td>6/3</td>
<td>19</td>
<td>100</td>
</tr>
<tr>
<td>6/4</td>
<td>21</td>
<td>100</td>
</tr>
<tr>
<td>Total</td>
<td>40</td>
<td>100</td>
</tr>
</tbody>
</table>

Students who participated in this study were 40 students including 19 students from 6/3 and 21 students from 6/4. Every student in both class participated in the research all and that accounted for 40 students. Therefore, it was 100 percent participation.

The researcher divided the results into three parts in order to answer the research questions. The first section was to describe the current situation of Pratom 6 students' reading fluency. Therefore, the following section was about the students’ reading fluency before giving the instructional development intervention. The results presented in 4.2.

4.2 Pre Instructional Development Intervention’s Results

This process was done to answer the first research question, "What are the current situations of the students’ reading fluency in English subject?" The process of reading
fluency assessment was to give the students reading test. The students were timed when they were reading to calculate the reading automaticity. The assessment passage consisted of 224 words. Each student read the passage only one time. The calculation of Word Read per Minute or WPM was as following:

Total words read

\[
\text{Total words read per minute (Automaticity)} + \text{Errors} = \text{Word Per Minute (Accuracy)}
\]

Figure 7: Calculation formula of Word per Minute by Amabile F.H (2005)

After all students finished the reading, the researcher analyzed the data and presented it as following:

4.2.1 Automaticity

Table 11: Average Automaticity of Pre-Test

<table>
<thead>
<tr>
<th>Class</th>
<th>Average Automaticity</th>
<th>Time spent to Read (in second)</th>
</tr>
</thead>
<tbody>
<tr>
<td>6/3 (n=19)</td>
<td>67.95</td>
<td>3.29 (209 seconds)</td>
</tr>
<tr>
<td>6/4 (n=21)</td>
<td>55.00</td>
<td>4.14 (258 seconds)</td>
</tr>
<tr>
<td>Mean</td>
<td>61.80</td>
<td>3.54 (234 seconds)</td>
</tr>
</tbody>
</table>

The automaticity for both classes was 61.80 words. The students spent time to read whole passage for about 3.54 minutes on average. Students who were in 6/3 had higher
rate of word automaticity accounting for 67.95 words on average while 6/3 had lower rate with 55.00 words per minute on average. Students in 6/3 were faster in reading the whole passage than 6/4 since they spent 3.29 minutes while the students in 6/4 spent 4.14 minutes in total.

4.2.2 Accuracy

Table 12: Accuracy of Pre-Test

<table>
<thead>
<tr>
<th>Class</th>
<th>No. of Word Read per Minute (n=224 words)</th>
<th>No. Incorrect Word</th>
<th>Time spent to Read (in second)</th>
<th>WPM</th>
</tr>
</thead>
<tbody>
<tr>
<td>6/3(n=19)</td>
<td>67.95</td>
<td>12.14</td>
<td>3.29 (209 seconds)</td>
<td>55.81</td>
</tr>
<tr>
<td>6/4(n=21)</td>
<td>55.00</td>
<td>9.74</td>
<td>4.14 (258 seconds)</td>
<td>45.26</td>
</tr>
<tr>
<td>Mean</td>
<td>61.42</td>
<td>10.94</td>
<td>3.54 (234 seconds)</td>
<td>50.80</td>
</tr>
</tbody>
</table>

*WPM = Word Per Minute*

According to the table 12, it shows that the average number of words read by students in 6/3 was higher than 6/4 (67.95 words and 55.00 words accordingly). However, from the statistics showing above indicates that 6/3 also had higher rate of average incorrect word read of all students (12.14 and 9.74 words accordingly). That result in average incorrect words read by all students showed the number of 10.94 words.

Therefore, the numbers showing above was the rate of reading fluency which calculated by subtracting the incorrect words from correct read words. The findings indicated that the total word per minute of both class is 50.80 words per minute. The results
indicated that 6/3 had higher rate of words per minute than those in 6/4 (55.81 and 45.26 accordingly).

4.2.3 Prosody

Table 13: Prosody of Pre-Test

<table>
<thead>
<tr>
<th>Item</th>
<th>Criteria</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Student placed vocal emphasis on appropriate words.</td>
<td>41</td>
</tr>
<tr>
<td>2</td>
<td>Student’s voice tone rise and fall at appropriate point in the text.</td>
<td>34</td>
</tr>
<tr>
<td>3</td>
<td>Student’s inflection reflected the punctuation in the text (e.g., voice tone rose near the end of a question).</td>
<td>31</td>
</tr>
<tr>
<td>4</td>
<td>In narrative text with dialogue, student used appropriate vocal tone to represent characters’ mental states, such as excitement, sadness, fear, or confidence.</td>
<td>25</td>
</tr>
<tr>
<td>5</td>
<td>Student used punctuation to pause appropriately at phrase boundaries.</td>
<td>54</td>
</tr>
<tr>
<td>6</td>
<td>Student used pause appropriately at phrase boundaries where it is necessary to divide the sentence as well as to show the break while reading.</td>
<td>32</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>36.17</strong></td>
</tr>
</tbody>
</table>
Table 12 illustrates the result of prosody observation from classes, 6/3 and 6/4. The students were unlikely to place vocal emphasis on appropriate words (41%). Similar result went along with student’s voice tone rise and fall at appropriate point in the text (34%). Moreover, in item 3 and 4, the results also showed that the students are unlikely to use punctuation effectively as well as the appropriate voice tones (30% and 25%).

The students were likely to use punctuation to pause appropriately at phrase boundaries (54%). However, they also failed to use pause appropriately at phrase boundaries where it is necessary to divide the sentence as well as to show the break while reading (32%).

The overall results of prosody evaluation do not satisfy the researcher. The students’ prosody seems to be fail with 31 percent. This number indicates that the students are likely to have low prosody in all six criteria (31.17%).

4.3 Result of Instructional Development Interventions

This section is developed to answer the second research question, “What IDI can be designed to improve students’ reading fluency for English subject?”

The researcher spent 4 weeks to collect the data. The data collection was done every day to improve students’ reading fluency. The students had to read each passage to pass the average of 55 words per minutes.

4.3.1 Implementation of Timed-Repeated Reading

4.3.1.1 The Development of Passage

According to Ehri’s phases of word recognition development, there are 5 phases to develop reading fluency. The researcher aimed to improve students to read words
automatically, therefore other four phases had to be consistently improved to meet the target results.

Ehri's Phases of Word Recognition Development

Figure 8: Ehri's Phases of Word Recognition Development (Ehri, 1995)

According to Figure 7, it was necessary for the research developed the reading fluency skill which students need to improve these reading abilities for these phrases. The researcher had searched and adapted some of reading materials containing from basic sound to chunks letter within words. The passages provided to students to read counting from easy with basic sounds to more and more difficult with complex sounds and spelling. The research chose passage according to these criteria.
Table 14: Number of words in each level by type of sounds

<table>
<thead>
<tr>
<th>Ehri’s Phase of Word Recognition</th>
<th>No. of Words with Single Consonant and Vowel</th>
<th>No. of Words with Blended Consonant and Vowel</th>
<th>No. of Word</th>
<th>Level of Passage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-Alphabetic</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Partial Alphabetic</td>
<td>More than 30</td>
<td>Up to 10</td>
<td>130-160</td>
<td>1</td>
</tr>
<tr>
<td>Full Alphabetic</td>
<td>More than 40</td>
<td>More than 10-20</td>
<td>161-200</td>
<td>2</td>
</tr>
<tr>
<td>Consolidated Alphabetic</td>
<td>More than 50</td>
<td>More than 20</td>
<td>200-400</td>
<td>3-4</td>
</tr>
</tbody>
</table>

Table 14 presents the number of words in each level divided by type of sound which were single consonant and vowel or the basic sound students should know and the more complex word with mixing of blended sounds and consonants. The researcher left the first phase because the population was in grade 6 and they had the ability to differentiate each alphabet (A-Z).

4.3.1.2 Timed- Repeated Reading Process

The timed- repeated reading process was the reading method that students need to read the same passage until they achieved expected level. Each student must read more than 55 words in 1 minute (which was the average words per minute in Pre-IDI). If they have failed, they had to re-read it again until they reached 55 minimum rate of passing. The timed-repeated reading procedures were as following;
1. The teacher is with the students in appropriate place and hand out the passage to the student.

2. Ask the students to read the text.

3. The teacher helps the students when they are struggle with reading words within 5 second. The teacher may give definitions of the words.

4. If the students’ rate of reading excess 55 words per minutes change the passage to the more difficult level.

The researcher collected the data for 4 weeks and the data were shown in the next section.

4.3.2 Average Repeated Reading per Passage

Table 15: The average repeated reading per passage and average number of passage read within 4 weeks

<table>
<thead>
<tr>
<th>Class</th>
<th>Average Number of Repeated-Reading</th>
<th>Average Accuracy</th>
</tr>
</thead>
<tbody>
<tr>
<td>6/3 (n=19)</td>
<td>2.35</td>
<td>72.40 WPM</td>
</tr>
<tr>
<td>6/4 (n=21)</td>
<td>4</td>
<td>57.40 WPM</td>
</tr>
<tr>
<td>Total (n=40)</td>
<td>3.18</td>
<td>64.90 WPM</td>
</tr>
</tbody>
</table>

Table 14 shows the results of the students’ progress in repeated reading. The average number of time students repeated reading one passage in 6/3 is lower than in 6/4.
In 6/3, the students were able to spend less time to read per one passage and they have higher number of passage read. The accuracy in 6/3 was higher than 6/4 that they have WPM equal 72.40 words per minute while 6/4 has word per minute only 57.40 words.

The average of repeated reading per 1 passage of the 2 classes was 64.90 words. The number of repeated time the students spend to read 1 passage was 3.18 times per one passage. The students could read 3.85 passages within 4 weeks on average.

4.3.3 Average Accuracy and Automaticity

Table 16: Average word per minute in progress in 4 weeks

<table>
<thead>
<tr>
<th></th>
<th>Week 1</th>
<th>Week 2</th>
<th>Week 3</th>
<th>Week 4</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>6/3</td>
<td>60.50 WPM</td>
<td>69.00 WPM</td>
<td>73.41 WPM</td>
<td>86.96 WPM</td>
<td>72.40 WPM</td>
</tr>
<tr>
<td>(n=19)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6/4</td>
<td>40.12 WPM</td>
<td>50.45 WPM</td>
<td>53.12 WPM</td>
<td>69.91 WPM</td>
<td>53.40 WPM</td>
</tr>
<tr>
<td>(n=21)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>50.31 WPM</td>
<td>59.45 WPM</td>
<td>63.27 WPM</td>
<td>78.44 WPM</td>
<td>62.90 WPM</td>
</tr>
<tr>
<td>(n=40)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 15 shows the progress of students with accuracy development. From the statistics above shows that there was a progress of accuracy every week. The students can increase their reading accuracy to reach 62.90 WPM on average. The students in 6/3 had higher WPM with the total number of 72.40 words. The students in 6/4 had lower accuracy rate with 53.40 words correct.
Figure 8 below indicates that the trend of reading progress is upward. The students in 6/3 have better results. The development trend of this class is in progress which is getting higher and higher every week. The result of 6/4 is quite the same as 6/3. 6/3 has consistent development of accuracy even though their ability in reading was lower than those in 6/3.

Figure 9: Progress of accuracy development
4.3.4 Impacts of IDI on students’ reading fluency

Overall Progress of Word Per Minute Week 1 to Week 4

According to the graph, the students’ word per minute was developing throughout the four weeks during the intervention period. The students’ word per minute in reading started in 50 word per minutes and increased considerably to about 60 words per minute in week two. In week three, there was a slight increase to about 65 words per minute. In last week, the word per minute in reading dramatically rose to almost 60 words per minutes which was considerably double increase from week one - week three

4.4 Post Instructional Development Intervention Result

In post IDI, the researcher presents the result to answer the third research questions that is “What are the differences of the level of Reading fluency between pre and post- test. The researcher gave the students post- reading after implementing IDI. Each student needed to read the passage and the researcher timed length of time students
spent to read the whole passage. After finishing reading, the researcher calculated the results of the readings. The researcher provides the result of post reading fluency test as following.

4. 4.1 Automaticity

Table 17: Average Automaticity of Post-Test

<table>
<thead>
<tr>
<th>Class</th>
<th>Average Automaticity</th>
<th>Time spent to Read (in second)</th>
</tr>
</thead>
<tbody>
<tr>
<td>N=40</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6/3 (n=19)</td>
<td>85.05</td>
<td>3.10 (190 seconds)</td>
</tr>
<tr>
<td>6/4 (n=21)</td>
<td>67.05</td>
<td>3.50 (230 seconds)</td>
</tr>
<tr>
<td>Mean</td>
<td>76.50</td>
<td>3.30 (210 seconds)</td>
</tr>
</tbody>
</table>

The result shows that the average number of automaticity was 76.50 words. The students spent 3 minutes 30 seconds to read minutes the whole passage on average. Students in 6/3 had higher rate of automaticity accounting for 85.05 words. While 6/4 had improved from 55.00 words to 67.05. The students in 6/4 spend 3 minute 50 seconds to read the whole passage.

4.4.2 Accuracy

Table 18: Average Accuracy of Post-Test

<table>
<thead>
<tr>
<th>Class</th>
<th>No. of Word Read per Minute (n=224 words)</th>
<th>No. Incorrect Word</th>
<th>Time spent to Read (in second)</th>
<th>WPM</th>
</tr>
</thead>
<tbody>
<tr>
<td>6/3(n=19)</td>
<td>85.05</td>
<td>7.24</td>
<td>3.10 (190 seconds)</td>
<td>77.81</td>
</tr>
<tr>
<td>6/4(n=21)</td>
<td>67.07</td>
<td>8.11</td>
<td>3.50 (230 seconds)</td>
<td>58.95</td>
</tr>
<tr>
<td>Mean</td>
<td>74.06</td>
<td>7.24</td>
<td>3.30 (210 seconds)</td>
<td>68.38</td>
</tr>
</tbody>
</table>
The results of post-test indicated an increase in number of words read was 74.06 words. The number of incorrect words has decreased to 7.24 words on average. Therefore, the word per minute has increased for both classes. The average word per minute is 69.85.

4.4.3 Prosody

Table 19: Prosody of Post-Test

<table>
<thead>
<tr>
<th>Item</th>
<th>Criteria</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Student placed vocal emphasis on appropriate words.</td>
<td>61</td>
</tr>
<tr>
<td>2</td>
<td>Student’s voice tone rise and fall at appropriate point in the text.</td>
<td>84</td>
</tr>
<tr>
<td>3</td>
<td>Student’s inflection reflected the punctuation in the text (e.g., voice tone rose near the end of a question).</td>
<td>61</td>
</tr>
<tr>
<td>4</td>
<td>In narrative text with dialogue, student used appropriate vocal tone to represent characters’ mental states, such as excitement, sadness, fear, or confidence.</td>
<td>67</td>
</tr>
<tr>
<td>5</td>
<td>Student used punctuation to pause appropriately at phrase boundaries.</td>
<td>94</td>
</tr>
<tr>
<td>6</td>
<td>Student used pause appropriately at phrase boundaries where it is necessary to divide the sentence as well as to show the break while reading.</td>
<td>44</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>68.50</td>
</tr>
</tbody>
</table>
After finishing post-test, the researcher found that the result of prosody had increased for 122 percent from 31% to 69%. The item that had the highest result is used of punctuation that had the result of 94%. The second highest was appropriate voice tone raise which accounted for 84%. Appropriate vocal tone was 67% higher than vocal emphasis on appropriate words (61%) and punctuation (61%). The only one item that fell to be over average level was appropriate of phrase boundaries which accounted for 44%.

The over result of prosody evaluation after post-test satisfy the researcher. The result can be translated that the students’ prosody improved through the IDI. The IDI has improved student prosody in reading from 36.17 % to 68.50 %.

4.5 Hypotheses Testing

In this section the researcher gave the comparison of the results of Pre and Post IDI. Moreover, the researcher presented the impacts of IDI that affected in students’ reading fluency as following:

4.5.1 Significant difference on students’ reading fluency before and after implementing IDI

Table 20: The Comparison of the Reading Fluency in Pre-test and Post-Test

<table>
<thead>
<tr>
<th>Reading Fluency Elements</th>
<th>Pre-Test</th>
<th>Post-Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Automaticity</td>
<td>61.80 words read per minute</td>
<td>76.50 words read per minute</td>
</tr>
<tr>
<td>Accuracy</td>
<td>50.20 WPM</td>
<td>68.38 WPM</td>
</tr>
<tr>
<td>Prosody</td>
<td>31.17%</td>
<td>68.50 %</td>
</tr>
</tbody>
</table>
The comparison of pre-test and post-test is shown in the Table 19. The results of pre-test and post-test indicated there are different numbers of reading fluency for each element. The automaticity increased from 61.80 words to 76.50 words. The accuracy of the students' reading rose from 50.20 to 68.85 words per minute. The last elements, prosody, increase as well by the number of average prosody increased from 31.17 percent to 68.50 percent in all 6 areas.

**Table 21: T-test Results**

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>N</th>
<th>Std. Deviation</th>
<th>Std. Error Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Pair 1 pretest</strong></td>
<td>50.80</td>
<td>40</td>
<td>30.00872</td>
<td>4.74479</td>
</tr>
<tr>
<td><strong>posttest</strong></td>
<td>68.85</td>
<td>40</td>
<td>25.31094</td>
<td>4.00201</td>
</tr>
</tbody>
</table>

**Paired Samples Correlations**

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Correlation</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Pair 1 pretest &amp; posttest</strong></td>
<td>40</td>
<td>0.832</td>
<td>0.000</td>
</tr>
</tbody>
</table>

**Paired Differences**

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Std. Error Mean</th>
<th>95% Confidence Interval of the Difference</th>
<th>t</th>
<th>df</th>
<th>Sig. (2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Pair 1 pretest - posttest</strong></td>
<td>-1.8050E1</td>
<td>16.66403</td>
<td>2.63481</td>
<td>-23.37941 -12.72059 -6.851</td>
<td>39</td>
<td>0.000</td>
<td></td>
</tr>
</tbody>
</table>

*at 0.05 significant level*
According to the results of T-test comparison of pre and post results of students’ reading fluency, indicated that the means of pre and post was different in which post-test mean of reading fluency (68.85) was higher than in pre-test (50.80). The t score showed the number of -6.851 at 0.05 significant level.

The statistic shows that the result of students reading in word per minute between pre and post-test indicating the significant difference by post-test having higher and better result. Therefore, the researcher has to hypotheses H10 due to the improvement of the score and hypothesis H1a is accepted.

To conclude, the result satisfied the hypotheses which stated that there was significant difference on students’ reading fluency before and after implementing IDI.
Chapter 5
Summary, Conclusion, and Recommendations

This chapter presents the summary and conclusion of the study. It also gives some recommendation for both in practice and for further study.

5.1 Summary of the findings

The research finding could answer the research questions as following:

1. What are the current situations of the students' reading fluency in English subject?

According to the pre-test results, it showed that students' reading fluency in three areas was considered in low level. The automaticity of the readings was only 61.80 words per minutes with 10.94 words incorrect per minutes. While the accuracy or words per minute were on 50.20 words. The prosody at the beginning of the IDI was just 31.17 percent which could be translated as low level.

Table 22: Comparison of Results between Pre and Post Test

<table>
<thead>
<tr>
<th>Reading Fluency Elements</th>
<th>Pre-Test</th>
<th>Post-Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Automaticity</td>
<td>61.80 words read per minute</td>
<td>76.50 words read per minute</td>
</tr>
<tr>
<td>Accuracy</td>
<td>50.20 WPM</td>
<td>68.38 WPM</td>
</tr>
<tr>
<td>Prosody</td>
<td>31.17%</td>
<td>68.50 %</td>
</tr>
</tbody>
</table>
2. *What are the impacts of IDI on the students’ reading fluency for English subject?*

The impacts of the IDI on students reading fluency in three areas were in positively ways. Within 4 weeks, the students had an increase in number of words read which started from 50.31 words in week 1 to 78.44 in week four and attained 62.90 words per minutes on overage.

3. *What are the results of the students’ ability to read before and after IDI?*

The post test result indicated the improvement of students’ reading in 3 areas. The students’ automaticity increased from 61.80 to 76.50 while the accuracy was 50.20 at the beginning and rose to 68.38 at the end of the research. The prosody also showed positive result which started with 31.17 percent to 68.50 percent of students who show initial voice tone of reading according to prosody observation in six areas which could be translated as quite good prosody.

5.2 Conclusion

This research aimed to study and analyze the current situation of students’ reading fluency in English subject as well as to design and implement timed-repeated reading as Instruction Development Intervention (IDI) for developing the students’ reading fluency for English subject. Moreover, it was also to evaluate the students’ reading fluency between before and after implementing IDI.

The sample group in this researcher were Pratom 6/3 and 6/4, accounting for 40 students. The students from 6/3 students accounted for 21 students and 6/4 students accounted for 19 students. The research took 4 weeks to collect the data.
The results of the study indicated that timed-repeated reading could be an effective tool to improve students’ reading fluency in terms of automaticity, accuracy, and prosody. The students’ reading fluency has increased by implementation of IDI or this case was timed-repeated reading. The pre-test and post-test of reading fluency show different results by post t-test indicated better performance.

The researcher, therefore, rejected Hypothesis Ho1 which said that there was no different on students’ reading fluency since the comparison of t-test showing that there was significant difference result between pre and post IDI. The researcher accepted the second hypothesis (Ha1) which stated that there is significant different on students’ reading fluency between before and after IDI.

5.3 Recommendations

5.3.1 Recommendations for practical use of the research findings

Teaching Process

The research finding can be used to solve many areas of the teaching process. The first one is to improve the teaching method that might be ineffective and discontinuous. Furthermore, it can be apply to improve students’ lack of reading knowledge skills since it can help them learn more in term of proper reading and phonetics. Also, it improved learners’ initial skills to read.

Teaching Materials

Lastly, the reading materials in this research were designed to be used to with students in this age. The teachers who teach in different levels may change their contents to the more difficult or easier level to meet students’ skills and target words to be read.

Individual Focus for improve better reading skills
This reaching style can be effectively applied to fulfill students' ability individually. It can be implemented to use different levels of students because the reading section is done by one teacher and one student reading per time. So, the improve reading fluency skills personally and directly which can effect in better results.

5.3.2 Recommendations for future research

The future research can apply this researcher as a future study tools as following;

1. The future research should focus on improving one element (automaticity, accuracy, prosody) of the reading fluency.
2. Researchers who interested in doing this topic may apply this method for longer of time such as 6 month or more to see the results in long term.
3. The future research may apply different techniques and compare the results of each technique to get the best tools to improve students’ fluency.
Bibliography


Appendix

Appendix A: Timed-Repeated Reading Development Set

Appendix B: Prosody Observation Form

Appendix C: Pre-Post Reading Assessment

Appendix D: Item-Objective Congruence (IOC) of Prosody Observation Forms

Appendix E: Pictures of IDI's Activities
Appendix A: Timed-Repeated Reading Development Set

Timed-Repeated Reading Development Set

Including:

Reading Record Chart

Repeated Reading Passages

Pre-test/Post-test
Appendix A: Timed-Repeated Reading Development Set

**Reading Record Chart**

**Words Read Correctly Per Minute**

Student Name: .................................. Grade: ........................ Starting Date: ........................ End Date: ........................

| 120 | 115 | 110 | 105 | 100 | 95 | 90 | 85 | 80 | 75 | 70 | 65 | 60 | 55 | 50 | 45 | 40 | 35 | 30 | 25 | 20 | 15 |
|-----|-----|-----|-----|-----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
### Appendix A: Timed-Repeated Reading Development Set

<p>| | | | | | | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Date</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Appendix A: Timed-Repeated Reading Development Set

Level 1 Passage 1

Trip to the Farm

My class went to a farm. An old man was there who told us what it is like to live on the farm. He walked us to the barn. In the barn he let us pet a big horse. The horse takes the man over the open land to round up his cows. We did not get to see the cows. They were far away eating grass. At this farm the cows do not give milk. They are sold for meat. Next to the barn was a pig pen. The pigs were tan and brown. They did not smell too good! The man said that he sells the pigs so that we can have ham, pork, and ribs. The last stop we made was at the hen house. The hens give eggs every day. The old man does not sell the eggs or the hens. He eats them! The man fixed our class some fresh eggs, too. It was a fun trip. (162 words)

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>11</td>
<td>12</td>
<td>13</td>
<td>14</td>
<td>15</td>
<td>16</td>
<td>17</td>
<td>18</td>
<td>19</td>
<td>20</td>
</tr>
<tr>
<td>21</td>
<td>22</td>
<td>23</td>
<td>24</td>
<td>25</td>
<td>26</td>
<td>27</td>
<td>28</td>
<td>29</td>
<td>30</td>
</tr>
<tr>
<td>31</td>
<td>32</td>
<td>33</td>
<td>34</td>
<td>35</td>
<td>36</td>
<td>37</td>
<td>38</td>
<td>39</td>
<td>40</td>
</tr>
<tr>
<td>41</td>
<td>42</td>
<td>43</td>
<td>44</td>
<td>45</td>
<td>46</td>
<td>47</td>
<td>48</td>
<td>48</td>
<td>50</td>
</tr>
</tbody>
</table>

Fluency Rate Formula: If Student Completes Passage in Less Than 60 Seconds

\[
\text{Fluency \ Rate \ (WCPM)} = \frac{\text{Number of words in story} - \text{# Errors}}{\text{Total Seconds} \times 60}
\]

\[
\begin{align*}
\text{# of words in story} &= 162 \\
\text{# Errors} &= 0 \\
\text{Total Seconds} &= \text{Fluence (WCPM)}
\end{align*}
\]
Trip to the Farm

My class went to a farm. An old man was there who told us what it is like to live on the farm. He walked us to the barn. In the barn he let us pet a big horse. The horse takes the man over the open land to round up his cows. We did not get to see the cows. They were far away eating grass. At this farm the cows do not give milk. They are sold for meat. Next to the barn was a pig pen. The pigs were tan and brown. They did not smell too good! The man said that he sells the pigs so that we can have ham, pork, and ribs. The last stop we made was at the hen house. The hens give eggs every day. The old man does not sell the eggs or the hens. He eats them! The man fixed our class some fresh eggs, too. It was a fun trip. (162 words)
A little blue bird sat on the branch. He was by himself and he was sad. He wanted to play with other birds. He wanted to -y up, up, up with them. It would be so much fun! The little blue bird hopped from branch to branch to and some bird friends. After a bit, he saw a pretty yellow bird in a nest.

“Maybe this bird will play with me,” said the little blue bird to himself.

“Yellow bird, will you play with me? We can -y up, up, and then down, down, down. We can have fun,” he said.

“No, I cannot play with you now. I must sit on my egg. A new little bird is in it and will come out soon. You may sit with me and we can talk together. That will be fun,” said the yellow bird.

The two birds sat together and talked. Soon the yellow bird popped up. She looked at the egg and saw a crack. Then, ONE, TWO, THREE, out came a new little yellow bird. Now the blue bird had two new friends to play with.
The Little Blue Bird

A little blue bird sat on the branch. He was by himself and he was sad. He wanted to play with other birds. He wanted to -y up, up, up with them. It would be so much fun! The little blue bird hopped from branch to branch to and some bird friends. After a bit, he saw a pretty yellow bird in a nest.

“Maybe this bird will play with me,” said the little blue bird to himself.

“Yellow bird, will you play with me? We can -y up, up, up and then down, down, down. We can have fun,” he said.

“No, I cannot play with you now. I must sit on my egg. A new little bird is in it and will come out soon. You may sit with me and we can talk together. That will be fun,” said the yellow bird.

The two birds sat together and talked. Soon the yellow bird popped up. She looked at the egg and saw a crack. Then, ONE, TWO, THREE, out came a new little yellow bird. Now the blue bird had two new friends to play with.
Appendix A: Timed-Repeated Reading Development Set

Level 2 Passage 1

Fog

Have you ever seen fog? Fog is a cloud that has formed on the ground.

Fog is made when there is too much water in the air. When the sun comes up, the water in the air goes away.

This makes the fog go away. Fog can form quickly and go away quickly as well. Next time you see fog you will know where it comes from. There are many kinds of fog.

Most of the fog we see is called wind fog. Wind fog forms when cool air is blown into a warm area. Many hot cities have wind fog. Another type of fog is called valley fog. It is found near mountains.

Valley fog only forms when it is cold outside. Fog can make it very hard to see. It is not safe to drive if it is very foggy. Fog can also make a place seem scary. Don’t be afraid though, fog is nothing to be scared of at all. (163 words)

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>11</td>
<td>12</td>
<td>13</td>
<td>14</td>
<td>15</td>
<td>16</td>
<td>17</td>
<td>18</td>
<td>19</td>
<td>20</td>
</tr>
<tr>
<td>21</td>
<td>22</td>
<td>23</td>
<td>24</td>
<td>25</td>
<td>26</td>
<td>27</td>
<td>28</td>
<td>29</td>
<td>30</td>
</tr>
<tr>
<td>31</td>
<td>32</td>
<td>33</td>
<td>34</td>
<td>35</td>
<td>36</td>
<td>37</td>
<td>38</td>
<td>39</td>
<td>40</td>
</tr>
<tr>
<td>41</td>
<td>42</td>
<td>43</td>
<td>44</td>
<td>45</td>
<td>46</td>
<td>47</td>
<td>48</td>
<td>48</td>
<td>50</td>
</tr>
</tbody>
</table>

Fluency Rate Formula if Student Completes Passage in Less Than 60 Seconds

\[
\text{Fluency in story} = \frac{\text{Words Correct} + \text{Total Seconds} \times 60}{\text{WCPM}}
\]

\[
\begin{align*}
\text{WCPM} &= \frac{\text{Words Correct}}{\text{Total Seconds}} \\
\text{Total Seconds} &= \frac{\text{Fluency in story} - \text{WCPM}}{60} \\
\text{Words Correct} &= \frac{\text{Fluency in story} - \text{Total Seconds} \times 60}{60}
\end{align*}
\]

<table>
<thead>
<tr>
<th>Words Correct</th>
<th>Total Seconds</th>
<th>Fluency in story</th>
</tr>
</thead>
<tbody>
<tr>
<td>162</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>
Fog

Have you ever seen fog? Fog is a cloud that has formed on the ground.

Fog is made when there is too much water in the air. When the sun comes up, the water in the air goes away.

This makes the fog go away. Fog can form quickly and go away quickly as well. Next time you see fog you will know where it comes from. There are many kinds of fog.

Most of the fog we see is called wind fog. Wind fog forms when cool air is blown into a warm area. Many hot cities have wind fog. Another type of fog is called valley fog. It is found near mountains.

Valley fog only forms when it is cold outside. Fog can make it very hard to see. It is not safe to drive if it is very foggy. Fog can also make a place seem scary. Don’t be afraid though, fog is nothing to be scared of at all.
Appendix A: Timed-Repeated Reading Development Set

Level 2 Passage 2

A Walk on the Beach

Mel and I wanted to take a walk on the beach. We dressed in our swimsuits and Mom put sunscreen on us. I took a towel with me because I knew we might get wet. The beach was not far away so we rode our bikes to get there fast. Mel and I parked our bikes and walked to the beach. The air smelled salty and the sand felt warm under our feet. Mel walked to the edge of the water. She saw a white bird flying in the sky. The bird landed near me. He flew away when I tried to catch him. I started to look for sea shells. Mel looked too. She found ten sea shells. I found four shells and a broken sand dollar. Mel found a hermit crab hiding in a shell. The walk on the beach made us hot. Mel put her feet in the water to cool off. Mel said I should put my feet in the water too. It felt good to get wet. The waves splashed on our legs. We had fun in the water. I was happy we went to the beach. (192 words)
A Walk on the Beach

Mel and I wanted to take a walk on the beach. We dressed in our swimsuits and Mom put sunscreen on us. I took a towel with me because I knew we might get wet. The beach was not far away so we rode our bikes to get there fast. Mel and I parked our bikes and walked to the beach. The air smelled salty and the sand felt warm under our feet. Mel walked to the edge of the water. She saw a white bird flying in the sky. The bird landed near me. He flew away when I tried to catch him. I started to look for sea shells. Mel looked too. She found ten sea shells. I found four shells and a broken sand dollar. Mel found a hermit crab hiding in a shell. The walk on the beach made us hot. Mel put her feet in the water to cool off. Mel said I should put my feet in the water too. It felt good to get wet. The waves splashed on our legs. We had fun in the water. I was happy we went to the beach.
Appendix A: Timed-Repeated Reading Development Set

Level 3 Passage 1

Messy Jessie

I liked spending time in her room. Her room was filled with all of the stuff she liked to do. Jessie loved art, tea parties, and sports. She had art supplies like colored pencils, markers, and paints. She owned tea sets with designs on them. She even had a softball signed by all of her teammates.

Jessie’s only trouble was finding things when she needed them. She never put anything away. When Jessie’s mother asked her to clean her room, she shoved things under her bed or desk. She piled things in her closet, too.

Jessie’s house was always tidy, but not her room! Jessie’s brother walked by her room every day and yelled, “Messy Jessie!”

Finally, Jessie’s mother said, “We have to clean your room.” Jessie knew she was right. She couldn’t stand it when she couldn’t find her glove before softball practice or her favorite markers to draw pictures. Jessie’s whole family helped clean. When they were finished, they looked around her room smiling proudly. Now Jessie could find anything she needed right away!

“What will I call you now?” her brother laughed.

“What about clean and mean!” Jessie yelled as she chased him out of her room. (200 words)

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>11</td>
<td>12</td>
<td>13</td>
<td>14</td>
<td>15</td>
<td>16</td>
<td>17</td>
<td>18</td>
<td>19</td>
<td>20</td>
</tr>
<tr>
<td>21</td>
<td>22</td>
<td>23</td>
<td>24</td>
<td>25</td>
<td>26</td>
<td>27</td>
<td>28</td>
<td>29</td>
<td>30</td>
</tr>
<tr>
<td>31</td>
<td>32</td>
<td>33</td>
<td>34</td>
<td>35</td>
<td>36</td>
<td>37</td>
<td>38</td>
<td>39</td>
<td>40</td>
</tr>
<tr>
<td>41</td>
<td>42</td>
<td>43</td>
<td>44</td>
<td>45</td>
<td>46</td>
<td>47</td>
<td>48</td>
<td>49</td>
<td>50</td>
</tr>
<tr>
<td>51</td>
<td>52</td>
<td>53</td>
<td>54</td>
<td>55</td>
<td>56</td>
<td>57</td>
<td>58</td>
<td>59</td>
<td>60</td>
</tr>
<tr>
<td>61</td>
<td>62</td>
<td>63</td>
<td>64</td>
<td>65</td>
<td>66</td>
<td>67</td>
<td>68</td>
<td>69</td>
<td>70</td>
</tr>
</tbody>
</table>

Fluency Rate Formula if Student Completes Passage in Less Than 60 Seconds

\[
\text{Fluency (WCPM)} = \frac{\text{Words Correct}}{\text{Total Seconds}} \times 60
\]

\[
\text{Words Correct} = \text{Total Words} - \text{Errors}
\]

\[
\text{Fluency (WCPM)} = \frac{162}{x} \times 60
\]
Messy Jessie

Jessie liked spending time in her room. Her room was filled with all of the stuff she liked to do. Jessie loved art, tea parties, and sports. She had art supplies like colored pencils, markers, and paints. She owned tea sets with designs on them. She even had a softball signed by all of her teammates.

Jessie’s only trouble was finding things when she needed them. She never put anything away. When Jessie’s mother asked her to clean her room, she shoved things under her bed or desk. She piled things in her closet, too.

Jessie’s house was always tidy, but not her room! Jessie’s brother walked by her room every day and yelled, “Messy Jessie!”

Finally, Jessie’s mother said, “We have to clean your room.”

Jessie knew she was right. She couldn’t stand it when she couldn’t find her glove before softball practice or her favorite markers to draw pictures. Jessie’s whole family helped clean. When they were finished, they looked around her room smiling proudly. Now Jessie could find anything she needed right away!

“What will I call you now?” her brother laughed.

“What about clean and mean!” Jessie yelled as she chased him out of her room. (200 words)
Level 3 Passage 2

A Mosquito Bit Me!

Come look! My arm is itchy and there is a red bump on it. I think a mosquito bit me.

Well, they don’t really bite. Mosquitoes have something like a needle on their bodies that is so small and sharp that humans usually do not feel it going in. Once they have stuck you, mosquitoes use stuff to keep your blood from drying up. When they are done, they leave some of the stuff behind in your skin. That is what makes it itchy.

Sometimes it helps to wash the area with warm soapy water, but there is really nothing you can do but wait for your body to heal. Only female mosquitoes drink blood. These females have sensors that help them find you for a meal. They can spot heat, so they know when a warm body is around.

They can also see bright colors and tell when something is moving. It is not good to have too many mosquitoes around. Sometimes they can carry germs which can make you very ill.

You can protect yourself by wearing lots of clothes, using bug spray, and making sure there is no water sitting in your yard. (196 words)

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>11</td>
<td>12</td>
<td>13</td>
<td>14</td>
<td>15</td>
<td>16</td>
<td>17</td>
<td>18</td>
<td>19</td>
<td>20</td>
</tr>
<tr>
<td>21</td>
<td>22</td>
<td>23</td>
<td>24</td>
<td>25</td>
<td>26</td>
<td>27</td>
<td>28</td>
<td>29</td>
<td>30</td>
</tr>
<tr>
<td>31</td>
<td>32</td>
<td>33</td>
<td>34</td>
<td>35</td>
<td>36</td>
<td>37</td>
<td>38</td>
<td>39</td>
<td>40</td>
</tr>
<tr>
<td>41</td>
<td>42</td>
<td>43</td>
<td>44</td>
<td>45</td>
<td>46</td>
<td>47</td>
<td>48</td>
<td>48</td>
<td>50</td>
</tr>
</tbody>
</table>

Fluency Rate Formula if Student Completes Passage in Less Than 60 Seconds

\[
\text{Fluency Rate} = \frac{\# \text{ of words in story} - \# \text{ Errors}}{\text{Words Correct} + \text{Total Seconds} \times 60}
\]

\[
162 - = \frac{\text{Words Correct}}{\text{Total Seconds}} \times 60 =
\]
A Mosquito Bit Me!

Come look! My arm is itchy and there is a red bump on it. I think a mosquito bit me.

Well, they don't really bite. Mosquitoes have something like a needle on their bodies that is so small and sharp that humans usually do not feel it going in. Once they have stuck you, mosquitoes use stuff to keep your blood from drying up. When they are done, they leave some of the stuff behind in your skin. That is what makes it itchy.

Sometimes it helps to wash the area with warm soapy water, but there is really nothing you can do but wait for your body to heal. Only female mosquitoes drink blood. These females have sensors that help them find you for a meal. They can spot heat, so they know when a warm body is around.

They can also see bright colors and tell when something is moving. It is not good to have too many mosquitoes around. Sometimes they can carry germs which can make you very ill.

You can protect yourself by wearing lots of clothes, using bug spray, and making sure there is no water sitting in your yard.
Shark Teeth

I have a new hobby. I look for shark teeth. Yes, shark teeth! One time, my dad told me a story about when he was a boy. His mom and dad used to take him to the beach. They would rent a little house. It was not far from the beach. My dad used to spend all day at the beach. He swam in the water. He ran in the sand. He looked for shark teeth for a long time.

My dad said that you could walk on the beach and see shark teeth in the sand. He showed me a box from his room. It had some of the shark teeth he found when he was a boy. I wanted to find shark teeth. I asked my dad if we could go to the beach, too. He said yes!

We rented a little house by the beach. I swam in the water. I ran in the sand. I looked for shark teeth for a long time. My mom gave me a bowl with holes in it. I put it under the sand at the beach. I let some water in. Then I shook it back and forth. All the sand fell out. A shark tooth might be left. It is not very big. Most are very small. We were there for three days.

I found a few shark teeth each day. I asked my dad why there were so many shark teeth at the beach. He said that this beach used to be under the water. There were a lot of sharks here. They sank to the ocean floor. All that are left of them now are the teeth. The teeth were stuck in the sand and are still there.

I love my new hobby! I put my shark teeth in a box in my room. I want to be just like my dad. I will have the teeth for a long time. (324 words)
Shark Teeth

I have a new hobby. I look for shark teeth. Yes, shark teeth! One time, my dad told me a story about when he was a boy. His mom and dad used to take him to the beach. They would rent a little house. It was not far from the beach. My dad used to spend all day at the beach. He swam in the water. He ran in the sand. He looked for shark teeth for a long time.

My dad said that you could walk on the beach and see shark teeth in the sand. He showed me a box from his room. It had some of the shark teeth he found when he was a boy. I wanted to find shark teeth. I asked my dad if we could go to the beach, too. He said yes!

We rented a little house by the beach. I swam in the water. I ran in the sand. I looked for shark teeth for a long time. My mom gave me a bowl with holes in it. I put it under the sand at the beach. I let some water in. Then I shook it back and forth. All the sand fell out. A shark tooth might be left. It is not very big. Most are very small. We were there for three days.

I found a few shark teeth each day. I asked my dad why there were so many shark teeth at the beach. He said that this beach used to be under the water. There were a lot of sharks here. They sank to the ocean floor. All that are left of them now are the teeth. The teeth were stuck in the sand and are still there.

I love my new hobby! I put my shark teeth in a box in my room. I want to be just like my dad. I will have the teeth for a long time.
Appendix A: Timed-Repeated Reading Development Set

Level 4 Passage 2

Our Hammock

Our yard had a lot of trees. Two trees were close enough to hang a hammock. A hammock is a type of bed that can be made from rope. You can hang them from trees. They are used for rest and fun.

We loved our hammock. It was in the shade of two large trees. There was a nice breeze in the hot summer. It was the best place to rest. Our cat liked to lay by my side. The cat climbed up and held onto the ropes. My brother also loved the hammock. He loved to swing high on it. If there was no one there to push him, he tied a rope around one of the other trees. Then he tied it to the hammock. He pulled on the rope and rocked the hammock back and forth!

We put the hammock away after it got wet in the summer rain. We hung it back up in the winter. There was no more rain. We tied the ropes around the trees. My brother climbed on. He asked me to push him. But after one push, both ends of the hammock broke. He fell to the ground! He laughed very hard. The ropes rotted during the time it was stored away!

The next summer, our two trees fell over in a storm. Now we miss our hammock. We tried to hang a new hammock with two other trees, but it was not as nice. The trees were not close enough. There was no shade. We loved having a hammock. Do you have a hammock?

<p>| | | | | | | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
<td>9</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>12</td>
<td>13</td>
<td>14</td>
<td>15</td>
<td>16</td>
<td>17</td>
<td>18</td>
<td>19</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>21</td>
<td>22</td>
<td>23</td>
<td>24</td>
<td>25</td>
<td>26</td>
<td>27</td>
<td>28</td>
<td>29</td>
<td>30</td>
<td></td>
</tr>
<tr>
<td>31</td>
<td>32</td>
<td>33</td>
<td>34</td>
<td>35</td>
<td>36</td>
<td>37</td>
<td>38</td>
<td>39</td>
<td>40</td>
<td></td>
</tr>
<tr>
<td>41</td>
<td>42</td>
<td>43</td>
<td>44</td>
<td>45</td>
<td>46</td>
<td>47</td>
<td>48</td>
<td>49</td>
<td>50</td>
<td></td>
</tr>
<tr>
<td>51</td>
<td>52</td>
<td>53</td>
<td>54</td>
<td>55</td>
<td>56</td>
<td>57</td>
<td>58</td>
<td>59</td>
<td>60</td>
<td></td>
</tr>
<tr>
<td>61</td>
<td>62</td>
<td>63</td>
<td>64</td>
<td>65</td>
<td>66</td>
<td>67</td>
<td>68</td>
<td>69</td>
<td>70</td>
<td></td>
</tr>
</tbody>
</table>

Fluency Rate Formula if Student Completes Passage in Less Than 60 Seconds

\[
\text{Fluency (WCPM)} = \left( \frac{\text{# of words in story} - \text{# Errors}}{\text{Words Correct}} + \text{Total Seconds} \right) \times 60
\]

162 - = + x 60 =
Our Hammock

Our yard had a lot of trees. Two trees were close enough to hang a hammock. A hammock is a type of bed that can be made from rope. You can hang them from trees. They are used for rest and fun.

We loved our hammock. It was in the shade of two large trees. There was a nice breeze in the hot summer. It was the best place to rest. Our cat liked to lay by my side. The cat climbed up and held onto the ropes. My brother also loved the hammock. He loved to swing high on it. If there was no one there to push him, he tied a rope around one of the other trees. Then he tied it to the hammock. He pulled on the rope and rocked the hammock back and forth!

We put the hammock away after it got wet in the summer rain. We hung it back up in the winter. There was no more rain. We tied the ropes around the trees. My brother climbed on. He asked me to push him. But after one push, both ends of the hammock broke. He fell to the ground! He laughed very hard. The ropes rotted during the time it was stored away!

The next summer, our two trees fell over in a storm. Now we miss our hammock. We tried to hang a new hammock with two other trees, but it was not as nice. The trees were not close enough. There was no shade. We loved having a hammock. Do you have a hammock?
## Appendix B: Prosody Observation Form

### Prosody Observation Form

<table>
<thead>
<tr>
<th>Item</th>
<th>Criteria</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Student placed vocal emphasis on appropriate words.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Student’s voice tone rise and fall at appropriate point in the text.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Student’s inflection reflected the punctuation in the text (e.g., voice tone rose near the end of a question).</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>In narrative text with dialogue, student used appropriate vocal tone to represent characters’ mental states, such as excitement, sadness, fear, or confidence.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Student used punctuation to pause appropriately at phrase boundaries.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Student used pause appropriately at phrase boundaries where it is necessary to divide the sentence as well as to show the break while reading.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Strawberry Jam

Dad never liked the jam we bought at the grocery store. He said it just didn't taste as good as the jam his grandmother used to make. When we told Grandma, she said she would show us how to make real homemade strawberry jam. She said we could make the jam as soon as the strawberries were ripe.

When the berries were ripe we all drove out to the farm to pick fresh strawberries. Grandma knows where to go to get the good ones. She showed us how to choose the reddest ones to make the best jam. The farmer gave us buckets and told us which rows we could search for berries.

It took us a while to fill our buckets. The nice thing about picking the berries is that we were allowed to eat a few. They were delicious.

Grandma finally said we had enough berries to make jam. The farmer weighed our buckets and told us how much to pay. Dad asked if he wanted to weigh me too for all the berries I had eaten. The farmer just laughed.

When we got home, Mom had jars and sugar set aside to make the jam. Grandma washed the berries and showed me how to hull them. Next we measured everything into a big pot and started to cook the jam. When it was finished we poured the hot jam into jars and sealed the jars with metal lids. Of course, we had to try some jam on toast after it cooled. Our jam was much better than any in the store.

Total words: _______ errors: _______ = words correct: _______

Retell:  ORF Total: _______

Source: DIBELS Oral Reading Fluency Progress Monitoring Third Grade Scoring Booklet by Roland H. Good III et al.
### Appendix D: Item – Objective Congruence (IOC) of Prosody Observation Forms

**Item – Objective Congruence (IOC) of Prosody Observation Forms**

<table>
<thead>
<tr>
<th>Item</th>
<th>Expert 1</th>
<th>Expert 2</th>
<th>Expert 3</th>
<th>Average of Ratings</th>
<th>Decision on test item</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Student placed vocal emphasis on appropriate words.</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>Acceptable</td>
</tr>
<tr>
<td>2. Student’s voice tone rise and fall at appropriate point in the text.</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>0.67</td>
<td>Acceptable</td>
</tr>
<tr>
<td>3. Student’s inflection reflected the punctuation in the text (e.g., voice tone rose near the end of a question).</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>Acceptable</td>
</tr>
<tr>
<td>4. In narrative text with dialogue, student used appropriate vocal tone to represent characters’ mental states, such as excitement, sadness, fear, or confidence.</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>0.67</td>
<td>Acceptable</td>
</tr>
<tr>
<td>5. Student used punctuation to pause appropriately at phrase boundaries.</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>Acceptable</td>
</tr>
<tr>
<td>6. Student used prepositional phrases to pause appropriately at phrase boundaries.</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>Acceptable</td>
</tr>
<tr>
<td>7. Student used subject–verb divisions to pause appropriately at phrase boundaries.</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0.33</td>
<td>Revised</td>
</tr>
<tr>
<td>8. Student used conjunctions to pause appropriately at phrase boundaries.</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>0.67</td>
<td>Acceptable</td>
</tr>
</tbody>
</table>

**IOC**

|        | 1 | 0.75 | 0.63 | 0.79 | Acceptable |

Decision on test item 0.5 – 1.0 were deemed acceptable. Below 0.5 have to be revised.
## Appendix D: Item – Objective Congruence (IOC) of Prosody Observation Forms

### Item – Objective Congruence (IOC) of Pre-test/Post-test

<table>
<thead>
<tr>
<th>Test item</th>
<th>Expert 1</th>
<th>Expert 2</th>
<th>Expert 3</th>
<th>Average of Ratings</th>
<th>Decision on test item</th>
<th>IOC</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. The test is appropriate to measure accuracy.</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>Acceptable</td>
<td>0.67</td>
</tr>
<tr>
<td>2. The test is appropriate to measure automaticity.</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>0.67</td>
<td>Acceptable</td>
<td></td>
</tr>
<tr>
<td>3. The test is appropriate to measure prosody.</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>Acceptable</td>
<td>0.89</td>
</tr>
</tbody>
</table>

**Decision on test item**
- 0.5 – 1.0 were deemed acceptable
- Below 0.5 have to be revised

**Ratings**
- 1 Acceptable

**Average of Ratings**
- IOC 0.67 0.89 Acceptable
Appendix D: Item – Objective Congruence (IOC) of Prosody Observation Forms

<table>
<thead>
<tr>
<th>Test item</th>
<th>Expert 1</th>
<th>Expert 2</th>
<th>Expert 3</th>
<th>Average of Ratings</th>
<th>Decision on test item</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. The test is appropriate to measure accuracy.</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>Acceptable</td>
</tr>
<tr>
<td>2. The test is appropriate to measure automaticity.</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>Acceptable</td>
</tr>
<tr>
<td>3. The test is appropriate to measure prosody.</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>Acceptable</td>
</tr>
<tr>
<td>IOC</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>Acceptable</td>
</tr>
</tbody>
</table>

Decision on test item:
- 0.5 – 1.0 were deemed acceptable
- Below 0.5 have to be revised
Appendix E: Pictures of IDI Activities
Appendix E: Pictures of IDI Activities