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**IHMP1**

# A Development of English Reading Diagnostic Test for Prathomsuksa Six Students

# in  Maha Sarakham Primary Educational Service Area Office 3

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## ABSTRACT

The objectives of this study were to develop and examine the quality of English reading diagnostic test on the validity, difficulty, discrimination and reliability,  to analyze the weaknesses in the English reading skill of Prathomsuksa six students in Maha Sarakham Primary Education Service area office 3.The samples in this research were 360 Prathomsuksa six students in Maha Sarakham Primary Educational Service Area Office 3, chosen from 147 schools through Multi-stage Random Sampling. The instrument used in this research consist of two part of tests; Test 1: The diagnostic test in oral reading skills, it is a performance test for individually pronunciation that divided into 5 parts, totally 30 items and Test 2: The diagnostic test in reading comprehension skills, it is multiple choice test with 4 alternatives, the test contains 40 items and was divided into 3 aspects. The data were analyzed by consider the content validity, Rater agreement index, difficulty, discrimination and reliability.  The findings were as follows:

1. The diagnostic test in oral reading skills had the content validity between 0.60 to 1.00, Rater Agreement Index value (RAI) of the test was 0.86

2. The diagnostic test in reading comprehension skills had the content validity between 0.60 to 1.00, the difficulty ranged between 0.14 to 0.51, the discrimination index ranged between 0.21- 0.71. The reliability of the test calculated by the Binomial formula was 0.94.

3. Analyzed the students' weaknesses in the oral reading skills showed in the most difficulties were pronunciation of short poem and second issue was linking sound pronunciation. The weaknesses in reading comprehension found that the most difficulties causes of reading comprehension weaknesses were from lacked of reading comprehension ability and lacked of knowledge of the language structure

**Keywords:** Diagnostic test, English reading skill

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## Introduction

English is an important tool that has a large influence on the lives of Thai people. Learning in the $21^{st}$ century, English as a first language is defined as one of the main bodies of knowledge (Core Subjects) that students must develop. In addition, reading is another vital skill in the main body of knowledge because it is believed to be an important foundation for people's development, encouraging the pursuit of new knowledge (SurasakPahe,2013) and self development for lifelong learning (Patcharin Aaromsawa, 2011) However, when considering the results of international assessments (PISA) and national testing (O-NET), it is found that English scores average below 50 percent, which is very low. The researcher, as an English teacher, sees that most students have a lot of trouble with reading, starting from issues of pronunciation, vocabulary, spelling, combining sounds of the alphabet, reading sentences, translating, and also including finding the main gist of a sentence. This is due to English not being a first nor second language as a result of students not using it in their daily life as much as they should do. Thus creating many problems, especially for beginner students in primary school, as this is when they start learning English. Therefore, it is necessary that students' reading problems need be developed and solved in accordance with the different issues and causes that vary individually.

A diagnostic test as another way of helping search for weaknesses and diagnosing reading problems of students individually makes it possible to find solutions and provide on point remedial teaching. The researcher is interested in developing diagnostic tests that test the English reading skill of sixth grade primary school students under Maha Sarakham Primary Education Service Area Office 3, as an approach to finding student's weaknesses, contributing on point student's development, as well as further helping improve the efficiency of teacher's teaching methods.

## Objectives of this Study

Objectives of this Study were:

1) To develop English reading diagnostic test for Prathomsuksa six students in Maha Sarakham Primary Education Service Area Office 3

2) To examine the quality of English reading diagnostic test for Prathomsuksa six students in Maha Sarakham Primary Education Service Area Office 3.

3) To analyze the weaknesses in the English reading skill of Prathomsuksa six students in Maha Sarakham Primary Education Service Area Office 3.

## Materials and Methods

### Study design and population

The populations in this research were 2,190 Prathomsuksa six students of the academic year 2558, based on 147 schools under Maha Sarakham Primary Education Service Area Office 3.

The sample used in this research were 360 Prathomsuksa six students of the academic year 2558, studying their first semester, under Maha Sarakham Primary Education Service Area Office 3.

Random sampling done by using the Multi-stage Random Sampling method, by means of the following steps:

Step one. Categorize the 147 schools, by measuring the number of students as the basis of division for each size, into 3 sizes of small, medium, and large.

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Step two. Randomly selecting schools to represent each size by dividing sizes: small, 3 schools; middle, 3 schools; and large, 3 schools. A total of 9 schools split into 3 groups composed of:

Group 1: Group of 60 people, used to survey answering incorrectly and survey weaknesses.

Group 2: Group of 100 people, used to investigate item's quality.

Group 3: Group of 200 people, used to examine the quality of the diagnostic tests and analyzing weaknesses.

**Materials**

The tools used in this research consist of 2 tests which are:

1. The diagnostic test in oral reading skills by means of practical reading tests done individually. 30 questions divided into 5 parts that consist of

1) Pronunciation of initial and final consonant sounds.

2.) Stressing of words and sentence.

3) Intonation in sentences.

4) Linking sounds in text.

5) Pronunciation of short poems.

2. The diagnostic test in reading comprehension skills by means of a multiple-choice test. 40 questions with a choice of 4 alternatives, divided into 3 areas composed of using Wh-questions, Yes-No Questions and Or-Questions.

**Data Collection**

Asking for permission to collect data and planning to carry out tests on the set dates, values are as shown in table 1.

**Table 1** Test Administration

| Testing | Materials | Items | Samples |
|---|---|---|---|
| Survey Stage: For surveying the wrong pronunciation and answer. | The oral reading survey test | 60 | 60 |
| | The reading comprehension survey test | 60 | |
| Stage 1: For investigating the item's quality. | The diagnostic test in oral reading skills | 45 | 100 |
| | The diagnostic test in reading comprehension skills | 60 | |
| Stage 2: For examine the quality of the tests and analyze the students 'weaknesses in English reading. | The diagnostic test in oral reading skills | 30 | 200 |
| | The diagnostic test in reading comprehension skills | 40 | |

**Test development**

Test 1: The diagnostic test in oral reading skills

1. The researcher studied the elements of pronunciation, that educators discussed and defined in the learning standards indicated in the 2551 learning a foreign language sixth grade basic education core curriculum, and has summarised the elements used in

creating the tests and analysing the weaknesses by dividing them into the following 5 parts:

Part 1 Pronunciation of initial and final sounds.

Part 2 Stressing of words and sentence..

Part3 Intonation in sentences.

Part 4 Linking sounds in text.

Part 5 Pronunciation of short poems.

2. A test created to survey mispronunciation, by means of individual practical reading tests. It is divided into 5 parts, composed of 60 questions in pronunciation of initial and final sounds, stressing of words and word groups, intonation in sentences, linking sounds in text, and pronunciation of short poems. It was then used to test the group of 60 people to survey answering incorrectly and survey weaknesses, and then the questions that students mispronounced the most in each part were selected to make a 45 question diagnostic test of reading skills.

3. 5 specialists examined the content validity of a total 45 test questions in the diagnostic test in oral reading skills; by finding the IOC (Index of Item Objective Congruence) values and selecting questions with an IOC value of 0.50 and up, (Hambleton, 1980) including revising and improving questions that did not meet the criteria based on suggestions from the specialists

4. A sample group of 100 people tested it first to find the item quality by using Rater agreement index value (RAI) and selecting 30 questions with the highest RAI values in each individual component.

5. Test questions that passed selection were tested, by a sample group of 200 people for a second time, to determine the quality of the entire test by finding the RAI values of the rater.

6. The results of the test were analysed to determine the quality of the test and diagnose student's reading weaknesses.

Test 2: The diagnostic test in reading comprehension skills

1. The researcher studied the elements of reading comprehension, that educators discussed and defined in the learning standards indicated in the 2551 learning a foreign language sixth grade basic education core curriculum, and summarised the elements, by dividing them into 4 causes, in order to analyse the causes of reading comprehension weaknesses.

1) Background knowledge

2) Knowledge of vocabulary

3) Knowledge of language structure

4) Reading comprehension ability

2. Created tests to survey incorrect answers and weaknesses in the form of fill-in-the-word tests. Split into 3 areas composed of 60 Wh-Questions, Yes-No Questions, and Or-Questions, and then tested on the incorrect answers and weaknesses group of 60 people. Then selected the answers that most students answered incorrectly, making them the distracters in the 60 question diagnostic test in reading comprehension skills.

3. 5 specialists reviewed the validity of the content and structure of the created diagnostic test in reading comprehension skills, by finding the IOC (Index of Item Objective Congruence) value and selecting questions with an IOC value of 0.50 and up, including revising and improving questions based on suggestions from the specialists, a total of 60 test questions.

4. A sample group of 100 people tested it first, to find each items quality and then select questions which have difficulty values from 0.20 to 0.80, have a discrimination index from 0.20 and up, (Brennan, 1972) as well as improving the distracters efficiency. From here on out, the test will focus on the discrimination index despite difficulty values not reaching the criteria that was set. From then, questions that passed the selection were tested for a second time with a sample group of 200 people,

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to determine the quality of the entire test and analyse reading comprehension weaknesses of students.

**Data collection method**

1. Diagnostic test in oral reading skills divided into 5 parts, carried out by 2 raters assessing the reading skills of students individually, by students pronouncing given words/sentences word for word, completing 30 questions. The evaluation criterion for reading was correct pronunciation1, mispronunciation 0. The passing criteria for students in each part are as follows,

Part 1 A 10 question test, passing criteria 7 questions

Part 2 A 10 question test, passing criteria 7 questions

Part 3 A 5 question test, passing criteria 3 questions

Part 4 A 4 question test, passing questions 2

Part 5 1 question test, passing criteria assessed using a rubric. Being able to correctly pronounce parts of a short poem, received 1 point. Mispronunciation of a short poem received 0 points. The raters recorded the results of every student and then analyzed the resul in order to examine the quality of the test and analyz weaknesses in reading pronunciation of students.

2. The diagnostic test in reading comprehension skills composed of 40 questions. Correct answers received 1 point, incorrect answers received 0. Specialists found that the appropriate criteria to determine the score cut-off point of the test was 60%, therefore the researcher used 60% to determine the score cut-off point. This meant that the passing score was equal to 24 points by testing a sample of 200 people, and test results were used to analyze the data to determine the quality of the test and diagnose weaknesses in reading comprehension of students.

**Data Analysis**

The data analysis was divided into 2 parts:

1) Data analysis for investigate the quality of the test were analyzed by considers the content validity, Rater agreement index, difficulty, discrimination and reliability as follows. (Figure 1)

2) The data analysis for analyze the students' weaknesses in English reading skills.
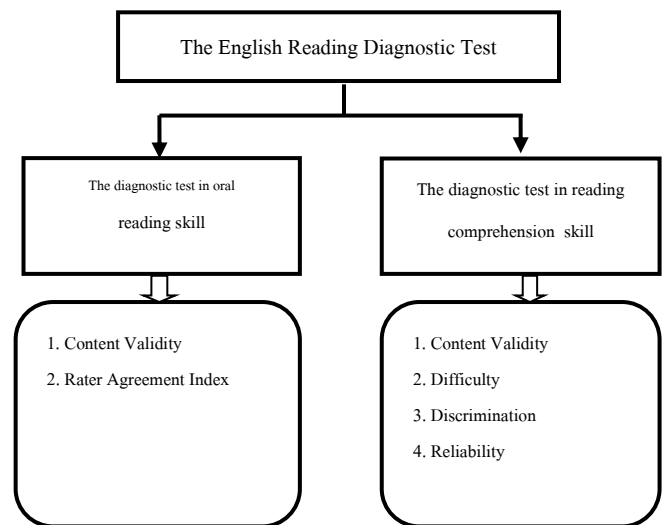


**Figure 1** Data analysis in English Reading diagnostic Test

**Results**

**Part 1: Development results of the English reading diagnostic test**

**1) Diagnostic test in oral reading skills**

The researcher developed the diagnostic test in oral reading skills by dividing it into 5 parts which composed of a total of 30 questions: Part 1. 10 questions on pronunciation of initial and final sounds; Part 2. 10 questions on word stress of words and word groups; Part 3. 5 questions on intonation in sentences; Part 4. 4 questions on linking sounds in text; Part 5. 1 question on pronunciation of a short poem.

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**2) Diagnostic test in reading comprehension skills**

The researcher developed the diagnostic test in reading comprehension skills in the form of a 40 question multiple-choice test, with 4 choices for each answer. Correct answers received 0, incorrect answers received 1. The test was structured into 3 areas. The first consisted of 17 reading comprehension questions using a Wh-questions, the second consisted of 14 Yes-No questions and the third consisted of 9 Or-questions. By testing with a sample of 200 people, the results of the test data were analyzed to determine the quality of the test and diagnose weaknesses in the reading comprehension of students.

**Part 2: Examination results of the quality of the diagnostic test in reading skills**

Test 1: The content validity had an IOC value, between tests and behavioral objectives, of 0.60 to 1.00. The quality inspections of each question, by finding the RAI of the raters had a value between 0.97 and 1.00. The quality of both test versions, calculated by finding the RAI value, was equal to 0.86.

Test 2: The basic statistics of the test showed: the mean at 13.12, the standard deviation of scores at 5.75, content validity between 0.60 and 1.00, difficulty value between 0.14 and 0.51, discrimination index between 0.21 and 0.80, cut-off score of 24 points or 60 percent, test accuracy equal to 0.94, and the standard error of measurement of the test was ±2.82.

**Part 3: Analysis results of student's weaknesses in English reading skills.**

1) For the oral reading pronunciation weaknesses of most students, it was found that pronunciation of the short poem, at 87 percent,

was the highest level. Following that was pronunciation of linking words in text, at 83 percent. Intonationin word and sentences at 76 percent. Pronunciation of initial and final sounds at 60 percent. The part with the least problems was stressing of words and word groups, at 47 percent.

2) For reading comprehension, it was found that the cause of reading comprehension weaknesses was from lacked of reading comprehension ability, an amount of 2,459 answers or a percentage of 45.42. Following that was lacked of knowledge of the language structure, a percentage of 27.50. The smallest weakness was the lack of background knowledge, which was misleading in helping to read, a percentage of 1.44.

**Discussion and Conclusion**

**Test 1: The diagnostic test in oral reading skill**

The content validity ranged from 0.60 to 1.00, indicating that the test developed by the researcher was consistent with the behavioural objectives. Consistent with Paisan Worrakam (2011) that said, if the assessment is done by 5 specialists, the IOC value must be greater than or equal to 0.60 to be usable. The IOC value of the assessor was equal to 0.86, meaning that the assessment results were very consistent and in the same direction. Consistent with Surachai Meechan's statements (2004) that said, if the values obtained are close to 1 then the assessor's rating was consistent at a high level, but if the values obtained are close to 0, then there is not much consistency. For the analysis of weaknesses, pronunciation of the short poem was student's biggest weakness, the problem being that students were unable to read the vocabulary and incorrectly split punctuation marks, thus making them unable to read

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the poem. Consistent with Richek et al. (1996) statements that state reader who cannot remember words correctly, and incorrectly link words with sounds, will not be able to understand the text at all

**Test 2: The diagnostic test in reading comprehension skill**

It was found that the test had a content validity value between 0.60 and 1.00, indicating that the test developed by the researcher was consistent with the behavioral objectives, and were able to be used in testing. The difficulty value of the test was between 0.14 and 0.51, meaning that some questions were rather difficult. However, this test's main primary focus was on the discrimination index value. The discrimination index value ranged from 0.21 to 0.80, indicating that the created test had a discrimination index value in accordance with the criteria. Consistent with Paisan Worrakam (2009) that said, test questions that have an appropriate difficulty will have a value between 0.20 and 0.80. Consistent with Pichit Ritcharoon (2011) that said, good tests must have discrimination index values that can distinguish the differing abilities of examinees from one another. It can be concluded that, the test developed by the researcher follows the criteria that was set. The test accuracy value was equal to 0.96, indicating that the test was reliable.

The analysis of weaknesses found that students had problems with reading comprehension ability and language structure, thus making it impossible to understand texts. Consistent with the research of Mokhtari and Thompson (2006), that found that awareness of language structure is significantly associated with fluency in reading ($r = 0.625$) and is significantly associated to understanding in reading ($r = 0.816$). This suggests

that readers who have a low level of knowledge of language structure will also have a low level of reading comprehension.

**Acknowledgement**

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