



The Development of English Reading Comprehension Exercises
Based on CEFR and Murdoch Integrated Approach (MIA)
for Mathayomsuksa 2 Students at Princess Chulabhorn
Science High School Chiang Rai

การพัฒนาแบบฝึกการอ่านภาษาอังกฤษเพื่อความเข้าใจตามกรอบ CEFR และ
Murdoch Integrated Approach (MIA) สำหรับนักเรียนชั้นมัธยมศึกษา
ปีที่ 2 โรงเรียนวิทยาศาสตร์จุฬาราชวิทยาลัย เชียงราย

Pimpawan Kanthakhiao, Sudarat Payaprom and Somlak Liangprayoon
พิมพ์พรรณ กันทะเขียว, สุดารัตน์ พญาพรหม และสมลักษณ์ เลี้ยงประยูร
Faculty of Humanities and Social Sciences, Chiang Rai Rajabhat University
คณะมนุษยศาสตร์และสังคมศาสตร์, มหาวิทยาลัยราชภัฏเชียงราย
Corresponding Author, E-mail: Pimpawan.kt@pcccr.ac.th

Abstract

This study aimed to: 1) determine the efficiency of English reading comprehension exercises based on CEFR and the MIA for Mathayomsuksa 2 students with the criterion of 75/75; 2) compare the student ability in English reading comprehension before and after learning using English reading comprehension exercises based on CEFR and the MIA, and 3) investigate the Mathayomsuksa 2 student satisfaction with English reading comprehension exercises based on CEFR and the MIA. The samples of this study were 24 Mathayomsuksa 2 students at Princess Chulabhorn Science High School Chiang Rai, Mueang District, Chiang Rai Province, selected using purposive sampling. The research instruments in this study included English reading comprehension exercises, lesson plans, the achievement test, and the satisfaction questionnaire. The statistics used to analyze the collected data were the mean, standard deviation, and dependent samples (t-test).

The research results found that:

1. The efficiency (E1/E2) of English reading comprehension exercises based on CEFR and the MIA for Mathayomsuksa 2 (Grade 8) students was 84.79/81.94, which was higher than the criterion of 75 / 75.
2. After the students learned using English reading comprehension exercises based on the CEFR and the MIA, the results showed that their English

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reading comprehension ability was higher after learning than before, at the 0.05 level of significance.

3. The students' satisfaction after learning English reading comprehension exercises based on the CEFR and the MIA was at a highest level (\bar{x} =4.51, S.D.= 0.68).

Keywords: Murdoch Integrated Approach, Reading Comprehension, Reading Skill Exercises

บทคัดย่อ

การวิจัยนี้มีวัตถุประสงค์เพื่อ 1) หาประสิทธิภาพของแบบฝึกหัดการอ่านภาษาอังกฤษตามกรอบ CEFR และการเรียนรู้แบบบูรณาการของเมอร์ดีอด (MIA) สำหรับนักเรียนชั้นมัธยมศึกษาปีที่ 2 ตามเกณฑ์ 75/75 2) เปรียบเทียบความสามารถของนักเรียนในการอ่านภาษาอังกฤษเพื่อความเข้าใจก่อนและหลังเรียนโดยใช้แบบฝึกหัดการอ่านตามกรอบ CEFR และการเรียนรู้แบบบูรณาการของเมอร์ดีอด (MIA) และ 3) ศึกษาความพึงพอใจของนักเรียนชั้นมัธยมศึกษาปีที่ 2 ต่อแบบฝึกหัดการอ่านภาษาอังกฤษเพื่อความเข้าใจตามกรอบ CEFR และการเรียนรู้แบบบูรณาการของเมอร์ดีอด (MIA) กลุ่มตัวอย่างที่ใช้ในการศึกษาคั้งนี้เป็นนักเรียนชั้นมัธยมศึกษาปีที่ 2 โรงเรียนวิทยาศาสตร์จุฬาภรณราชวิทยาลัย เชียงราย อ.เมือง จ.เชียงราย จำนวน 24 คน โดยใช้วิธีการคัดเลือกแบบเจาะจง เครื่องมือวิจัยที่ใช้ในการศึกษานี้ประกอบด้วยแบบฝึกหัดการอ่านภาษาอังกฤษ, แผนการสอน, แบบทดสอบวัดผลสัมฤทธิ์ทางการเรียนการอ่านภาษาอังกฤษเพื่อความเข้าใจ จำนวน 30 ข้อ และแบบสอบถามความพึงพอใจของนักเรียนชั้นมัธยมศึกษาปีที่ 2 ที่มีต่อแบบฝึกหัดการอ่านภาษาอังกฤษเพื่อความเข้าใจตามกรอบ CEFR และการเรียนรู้แบบบูรณาการของเมอร์ดีอด (MIA) จำนวน 20 ข้อ สถิติที่ใช้ในการวิเคราะห์ข้อมูล ได้แก่ ร้อยละ ค่าเฉลี่ย ค่าเบี่ยงเบนมาตรฐาน และการทดสอบ (t-test)

ผลการวิจัยพบว่า

1. ประสิทธิภาพของแบบฝึกหัดการอ่านภาษาอังกฤษเพื่อความเข้าใจตามกรอบ CEFR และการเรียนรู้แบบบูรณาการของเมอร์ดีอด (MIA) สำหรับนักเรียนชั้นมัธยมศึกษาปีที่ 2 มีประสิทธิภาพ 84.79/81.94 ซึ่งสูงกว่าเกณฑ์ที่ตั้งไว้ (75/75)
2. ความสามารถทางการอ่านภาษาอังกฤษเพื่อความเข้าใจของนักเรียนชั้นมัธยมศึกษาปีที่ 2 สูงกว่าก่อนเรียนอย่างมีนัยสำคัญทางสถิติที่ระดับ 0.05
3. นักเรียนมีความพึงพอใจในการใช้แบบฝึกหัดการอ่านภาษาอังกฤษเพื่อความเข้าใจตามกรอบ CEFR และการเรียนรู้แบบบูรณาการของเมอร์ดีอด (MIA) ในระดับมากที่สุด

คำสำคัญ: การเรียนแบบ MIA (Murdoch), การอ่านภาษาอังกฤษเพื่อความเข้าใจ, ชุดแบบฝึกทักษะการอ่าน



1. Introduction

Many foreign languages are used for communication and exchange, with English being one of the most widely spoken globally. In Thailand, the Ministry of Education has mandated English as a foreign language in schools, as outlined in the Basic Education Core Curriculum B.E. 2551 (A.D. 2008). Learning English aims to help students communicate effectively, foster positive attitudes toward other cultures, and enhance their adaptability in a globalized world.

The Ministry of Education has adopted the Common European Framework of Reference for Languages (CEFR) as a benchmark for English language teaching and learning. This framework aligns with international standards and focuses on the four essential skills: listening, speaking, reading, and writing. Among these, reading is foundational, supporting vocabulary development and improving fluency in other skills (Wiwattanon, 2012). However, despite efforts, challenges persist. Students often lack interest in reading due to limited vocabulary and comprehension issues. Additionally, unengaging teaching methods exacerbate these difficulties (Lamsombut, 2012).

At Princess Chulabhorn Science High School Chiang Rai, CEFR test results from the 2023 academic year revealed that 48.06% of Mathayomsuksa 2 students scored below the A2 level. This aligns with PISA findings that Thai students struggle with complex texts, highlighting deficiencies in vocabulary, reading strategies, and comprehension. Addressing these issues requires innovative methods to improve reading skills.

The Murdoch Integrated Approach (MIA) has shown promise in enhancing reading comprehension through critical thinking, problem-solving, and self-directed learning. Studies by Boonroungrod (2024) and Watsaman (2023: 1-5) indicate significant improvements in students' reading abilities and critical thinking skills when using MIA. Murdoch (1986) also emphasized the integration of cognitive strategies to enhance information retention.

To address these challenges, the researcher would like to develop English reading comprehension exercises based on the CEFR and MIA. This approach aligns with the Ministry of Education's policy to reform education and improve English language skills. Combining CEFR's structured benchmarks with MIA's



interactive methods can fill gaps in research and practice, providing a more effective way to enhance reading comprehension and problem-solving abilities.

2. Objectives of the Research

1. To determine the efficiency of English reading comprehension exercises based on CEFR and the MIA for Mathayomsuksa 2 students with the criterion of 75/75.

2. To compare the student's ability in English reading to comprehension before and after learning using English reading comprehension exercises based on the CEFR and the MIA.

3. To investigate the Mathayomsuksa 2 students' satisfaction with English reading comprehension exercises based on the CEFR and the MIA.

3. Research Methodology

3.1 Research Design

This study is experimental research conducted using a one-group pretest-posttest design.

3.2 Population and Participants

The population of this study was Mathayomsuksa 2 students at Princess Chulabhorn Science High School, Chiang Rai. The total number of the students was 96. The participants were Mathayomsuksa 2, Class 1 consisting of 24 students in the second semester of the academic year 2024. The participants were selected by purposive sampling.

3.3 Research Instruments

The research instruments used in this research were: 1) the English reading comprehension exercise; 2) lesson plans; 3) the achievement test; 4) the satisfaction questionnaire.

1. English reading comprehension exercises

The exercises covered six topics: advertisements, Mary's travel blog, train schedules, my city, how to make homemade lemonade, and celebrities. These topics align with the CEFR A2 level, which aims to help students understand short, simple texts that include frequently used words



and phrases, names, and internationally recognized terms. The exercises, based on the Murdoch Integrated Approach (MIA), were organized into seven steps as follows: 1) Priming Questions, 2) Acknowledging Vocabulary, 3) Reading the Text, 4) Understanding the Text, 5) Transferring Information, 6) Exercising with Jigsaw Pieces and Paragraph Structure, and 7) Evaluation and Correction. The contents were taken to experts: a university lecturer and two experienced school teachers to check the appropriateness of the content, measurement, and evaluation.

2. Lesson plans

Six lesson plans were designed for 16 class hours and implemented during the Comprehensive Study Group (C.S.G.) period after school. The lesson plans, based on the CEFR and MIA, were reviewed by experts to assess the appropriateness of the content, measurements, and evaluation methods. To examine their practicality, the lesson plans were pilot-tested with Mathayomsuksa 2 students from another class at the same school, who were not participants in this study.

3. The achievement test

The pre-test and post-test were the same test. The test was created to measure achievement in English reading comprehension. It consisted of 30 multiple-choice items, each with four choices, and took 60 minutes to complete. The test was used with students not part of the sample to assess discrimination, reliability, and item difficulty.

4. The satisfaction questionnaire

The questionnaire was created to assess the students' satisfaction with English reading comprehension. The questionnaire was divided into four aspects: 1. teacher, 2. content, 3. teaching and learning activities, and 4. the benefits of aspects contained five items. The questionnaire used a 5-point Likert scale. The satisfaction questionnaire was taken to experts to evaluate the coverage of the questions, the appropriateness of the questions, the clarity of the language, and the form of the questionnaire. The satisfaction questionnaire was not pilot-tested with the students of the part of the sample.



3.4 Data Collection

1. The pre-test was administered to measure their ability English reading comprehension.
2. The students learned using English reading comprehension exercises based on the CEFR and the MIA. The entire process spanned 8 weeks and was conducted after school during the Comprehensive Study Group (CSG) period.
3. The post-test was administered to the students at the end of the 8 weeks.
4. The students responded to the satisfaction questionnaire.

3.5 Data Analysis

1. Statistical analysis was conducted to assess the efficiency of the lesson plan by the 75/75 criteria.
2. The dependent t-test was used to compare the students' ability in English reading comprehension before and after using English reading comprehension exercises.
3. The average score (\bar{x}) and standard division (S.D.) were used to analyze students' satisfaction with English reading comprehension exercises based on the CEFR and the MIA.

4. Research Results

From the various data analysis, the researcher, therefore, summarizes the findings according to the following important points:

4.1 The results of the efficiency of English reading comprehension exercises based on the CEFR and the MIA for Mathayomsuksa 2 students, with a criterion of 75/75, are presented in Table 1:

Table 1: The Efficiency of English Reading Comprehension Exercises Based on the CEFR and the MIA

Learning Outcome	Total Score	\bar{x}	S.D.	Percentage
E1	60	50.86	2.97	84.79
E2	30	24.58	2.83	81.94
The efficiency of E1/E2 were 84.79/81.94				



From Table 1, the effectiveness of the English reading comprehension exercises based on the CEFR and MIA showed an Efficiency of Process (E1) of 84.79 and an Efficiency of Product (E2) of 81.94, or E1/E2. Therefore, the efficiency of the English reading comprehension exercises based on the CEFR and MIA was 84.79/81.94, which is higher than the criterion of 75/75.

4.2 The results of comparing students' English reading comprehension abilities before and after learning with English reading comprehension exercises based on the CEFR and the MIA showed significant improvement. The data were analyzed and compared using a t-test, as presented in Table 2.

Table 2: Comparison of scores on the pretest and posttest of students' reading comprehension skills

Testing	N	Total Score	\bar{x}	S.D.	T-test	Sig
Pre-test	24	30	14.46	2.72	31.61	.05*
Post-test	24	30	24.58	2.83		

Note. * Significance difference at .05 level using t-test

From Table 2, it was found that the mean score of the students' pre-test was 14.46, with a standard deviation (S.D.) of 2.72, while the mean score of the post-test was 24.58, with a standard deviation (S.D.) of 2.83. The mean score of the post-test was higher than that of the pre-test. The results of the t-test revealed a statistically significant difference between the pre-test and post-test scores at the 0.05 level.

4.3. The results of Mathayomsuksa 2 students' satisfaction with learning through the use of English reading comprehension exercises are presented in Table 3.

Table 3: The students' satisfaction with the English reading comprehension exercises

Items	Topics	\bar{x}	S.D.	Levels
Teacher				
1	The teacher provides a clear understanding of the content.	4.17	0.99	High



2	The activities the teacher provides have clear learning objectives.	4.54	0.51	Highest
3	The teacher encourages students to work individually and/or in groups.	4.38	0.71	High
4	The teacher gives students many opportunities to ask questions.	4.33	0.76	High
5	The teacher provides interesting techniques and skills during the presentation.	4.17	0.99	High
		4.32	0.77	High
Content				
6	The content covers the learning objectives.	4.75	0.68	Highest
7	The order of the content is appropriate.	4.50	0.59	High
8	The content is easy to understand and suitable for the students' English proficiency level.	4.49	0.64	High
9	The reading passages are interesting and appropriate for students.	4.63	0.65	Highest
10	The length of the content is appropriate for the given time.	4.17	0.99	High
		4.51	0.84	Highest
Teaching and learning activities				
11	The provided activities stimulate students to learn more effectively.	4.38	0.71	High
12	The steps of the activities are clearly explained.	4.75	0.68	Highest
13	The organization of the activities, along with the atmosphere and environment, is non-stressful.	4.67	0.70	Highest
14	A variety of activities is provided to maintain engagement.	4.50	0.59	High
15	The activities enable students to practice reading more effectively.	4.75	0.68	Highest
		4.61	0.52	Highest



Benefits						
16	Students use English reading comprehension exercises to better understand and answer questions about the readings.	4.71	0.55	Highest		
17	Students can read passages well.	4.67	0.56	Highest		
18	Students have a positive attitude towards learning English.	4.50	0.59	High		
19	Students feel more confident when reading in English.	4.54	0.78	Highest		
20	Students can integrate knowledge and apply it to daily life.	4.49	0.64	High		
		4.58	0.65	Highest		
	Total	4.51	0.68	Highest		

A study of the satisfaction of Mathayomsuksa 2 students towards learning with English reading comprehension exercises revealed that the students had overall satisfaction at the highest level ($\bar{X} = 4.51$, S.D. = 0.68). When considering each aspect, it was found that the teaching and learning activities aspect had the highest mean score ($\bar{X} = 4.61$, S.D. = 0.52), followed by the benefits aspect ($\bar{X} = 4.58$, S.D. = 0.65), the content aspect ($\bar{X} = 4.51$, S.D. = 0.84), and the teacher aspect ($\bar{X} = 4.32$, S.D. = 0.77), respectively.

5. Discussion of Research Results

The findings show that English reading comprehension exercises significantly improve students' English reading comprehension skills.

The efficiency of English reading comprehension skill exercises based on the CEFR conceptual framework by using the MIA for Mathayomsuksa 2 (Grade 8) students was (E1) 84.79 and (E2) 81.94, which was higher than the criterion of 75 / 75 because the researcher created a systematic English reading comprehension exercise based on a foreign language curriculum, indicators, strands, and learning activities. In addition, the English reading comprehension exercises were based on CEFRs' contents and used the MIA. Then the English reading comprehension exercises were tried out to find any mistakes. After



that, the researcher edited the found mistakes. Finally, the English reading comprehension exercises were applied to the sample group. Therefore, the efficiency of the English reading comprehension exercises based on the CEFR by the MIA was higher than the criterion of 75 / 75. This study is in accordance with other studies done by other researchers (e.g., Chenchawand, 2008; Jindakul & Unakin, 2023; Tipsuk, 2010). Jindakul and Unakin (2023) studied the development of English reading comprehension ability by using exercises based on the Murdoch Integrated Approach (MIA) for students in grade 11 Watcharawittaya school, Kamphaeng Phet. Their results showed that the exercises based on the Murdoch Integrated Approach (MIA) were effective with a result of 81.80/86.17.

Another important finding worth mentioning is the students' reading abilities. After the students learned the contents by using English reading exercises based on the CEFR and the MIA, their reading comprehension was higher than before learning as a result of the MIA's seven steps in teaching and learning, as shown by the statistically significant difference of .05. This approach focuses on making students think using processes related to problem-solving. Teaching and learning activities begin with asking students to answer important questions about the reading material. Then, students discuss by combining their previous experiences with new experiences and solving the problems. In addition, using the MIA in reading activities allows students to develop their thinking abilities. This is consistent with the research of Phetkong (2018) who studied the effects of teaching English reading using the MIA on English reading comprehension and student satisfaction among Mathayomsuksa 4 students at Huai Yot School in Trang. His research found that Students' English reading comprehension after learning was higher than before learning at the .05 level. Similarly, Thongkot (2016) studied the development of English reading comprehension skill exercises based on the CEFR conceptual framework for Mathayomsuksa 3 Students at Pittayakhom School. It was found that students' academic achievement using English reading exercises based on the CEFR was higher than before learning as shown by the .05 level.

In addition, the student's satisfaction with learning using English reading exercises based on the CEFR was at the highest level ($\bar{x}=4.51$, S.D =



0.68). There are various activities and media appropriate to the age of the learners, such as worksheets, pictures, and reading passages. It makes the students interested in participating and organizing teaching and learning activities. This allows students to work with their friends and learn together to gain confidence in doing various activities. In addition, students can fully express their opinions and ask questions about issues they do not understand from friends at any time. These factors are beneficial to reading comprehension and make students more satisfied with reading as well. This is consistent with Jindakul and Unakarin (2023) studying the development of English reading comprehension ability by using exercises based on the Murdoch Integrated Approach (MIA) for students in grade 11 at the Watcharawittaya school, Kamphaeng Phet. The results showed that students' satisfaction with exercises based on the MIA was similarly at the highest level. Also, this study was done by Thongkumdee and Chottiwat (2023). They indicated that students' satisfaction with the English Reading Comprehension Skill Exercises using the MIA for grade 6 students was very high.

6. Recommendations for Further Research

In light of the findings from this study, the following recommendations for further research:

1. Researchers should conduct research using CEFR and MIA-based exercises with students from various grade levels to determine if the results are consistent across age groups.
2. Researchers should investigate the long-term effects of using the CEFR and MIA reading exercises on students' English reading comprehension and satisfaction.

7. Knowledge Received

Through the study of developing English reading comprehension exercises based on the CEFR and the Murdoch Integrated Approach (MIA) for Mathayomsuksa 2 students, the following key insights were obtained:

1. The development of reading exercises based on the CEFR and MIA provides teachers with a practical tool, offering clear guidelines to enhance students' English reading skills.



2. These exercises serve as valuable resources for learners seeking to improve their English reading comprehension by providing structured and systematic steps, they help students build confidence and proficiency in reading English texts.

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