The Implementation of Quizizz Application to Enhance Reading Comprehension Ability of Mathayomsuksa 2 Students

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Abstract

The objectives of this research were to compare the students' reading comprehension ability before and after the implementation of the Quizizz application and to explore the students' opinions about the implementation of the Quizizz application to enhance their reading comprehension ability. The population was 276 Mathayomsuksa 2 students who enrolled in the course of Supplementary English (E22201) in the first semester of the 2021 academic year at Dara Academy, Chiang Mai, Thailand. The sample group consisted of 46 Mathayomsuksa 2/6 students obtained by applying the cluster sampling method. The research instruments used were the lesson plans, the pre-and post-test English reading comprehension, and a questionnaire. Statistical methods for data analysis included mean $(\bar{X})$, percentage, standard deviation (S.D.), and the paired sample t-test. The results revealed the implementation of the Quizizz application enhanced the students' reading comprehension ability. The average of the post-test score result was significantly higher than the average of the pre-test score at a level of .05. The students had an overwhelmingly positive opinion of the implementation of this instructional application. They found reading comprehension class with the implementation of the Quizizz application enjoyable, and they viewed that the use of the Quizizz application enabled them to understand and learn systematically.

Keywords: Quizizz application, Reading Comprehension Skills

Introduction

Due to the differences in linguistic aspects between English and Thai languages, students have encountered difficulties learning English, both at school and university levels. Moreover, under-qualified teachers, large class sizes, and the lack of exposure to an English-using environment are considered language barriers for the Thai educational system to overcome (Noom-ura, 2013:139-147). However, it has been discovered that Thai students have had problems reading English texts (Adunyarittigun, 2002:244-271). Adunyarittigun (2002:244-271) also mentioned that poor reading ability in English remain a widespread problem among Thai students at all levels of education. According to Thai cultural factors, Thai people prefer watching and listening rather than reading. Consequently, reading ability is not a habit nurtured in Thai society. Likewise, most students at the school have a small vocabulary size and limited background knowledge in recognition of complex grammatical structures. Moreover, the influence of the Thai language is considered a pivotal factor to impede the students' transfer to their English reading skills. Additionally, the traditional learning method is another factor to demotivate the students' engagement in learning and causes them to feel isolated in the classroom. The inadequate knowledge of English vocabulary, the complex structures of language, and the word difficulties could be obstacles to the students' reading comprehension (Asraf and Ahmad, 2003: online). Compared to the other skills, reading is the most vital issue because it is the chosen instrument to acquire knowledge (Chawwang, 2008: online). In line with this view, Hung and Ngan (2015: 10-20) stated that reading is a fundamental skill that can enhance the vocabulary, fluency, speaking, and writing acquisition of students, and can eventually assist them to master their target language. Furthermore, the ability to read serves as a foundation for all learning as well as social and

economic development and can improve general language skills (Qrqez & Ab Rashid, 2017:421-431).

After having been an English teacher at Dara Academy School for two years, it has been observed that reading comprehension is one of the problematic issues in learning English. As reading is a major source of language acquisition, the ability to read has become necessary for the students. Compared to the other skills, the English reading comprehension ability of the students at the school has remained unsatisfactory. This poor ability in line with the view of Iqbal, Noor, Muhabat, and Kazemian (2015:1-6), factors responsible for poor English reading comprehension at secondary school level students are a poor command of vocabulary, inability to guess the meaning from the context, having no interest in reading English literature, cramming habit, lack of understanding of parts of speech, and no awareness of different reading strategies; for this reason, the researcher would like to improve the students' reading comprehension ability.

As technology is a key aspect of learning in the education sector nowadays, it enhances the relationship between teachers and students as well as encourages the students' engagement, motivation and collabora-tion. Quizizz, according to Nanda (2018: online), is an online assessment application used as a fun multiplayer classroom game in which all students can practice together using their computers, smartphones, and iPads. Quizizz displays multiple-choice questions with two, three, or four-point answers on each student's screen, allowing them to work at their own pace and evaluate their results at the end. Quizizz can also integrate with Google Classroom. The quizzes can be incorporated and distributed to the students if they utilize this as a learning management system. This is because the URLs has previously been verified and linked to the students' school emails. Quizizz is one of the platforms that can develop interactive lessons to engage the stu-dents' attention which allows them to collaborate in their learning activities.

Moreover, the competition through interactive quiz games provides the students with a game-like environment which makes the classroom more playful and enjoyable (Basuki & Hidayati, 2019: online). Furthermore, Quizizz offers some features which provide the students to answer questions at their own pace and review their answers at the end. As a result, the learning effort, learning motivation, activity involvement, and academic achievement will be increased (Brunat, 2018, as cited in Basuki & Hidayati, 2019: online). With these advantages, Quizizz has been used as a tool for teaching English around the world (Priyanti, Santosa and Dewi, 2019:71-80; Amalia, 2020:1-8; Razali, Nasir, Ismail, Sari and Salleh, 2020:1-11).

Since Thailand focuses on integrating technology in foreign language learning, this study applied the Quizizz application in reading comprehension to enhance the students' learning achievement. With this approach, the students should be able to develop their learning system in terms of learning engagement, motivation, collaboration, and enjoyment, which indirectly influence their reading comprehension knowledge. Apart from the contribution to the students, the Quizizz application will allow the teachers to adapt their teaching styles to meet the students' needs, requirements, and proficiency levels.

Therefore, this research aimed to study whether the implementation of the Quizizz application could enhance students' English reading comprehension ability relevant to the objectives of the research study, which were to compare the students' reading comprehension ability before and after the implementation of the Quizizz application and to explore the students' opinions about the implementation of the Quizizz application to enhance their reading comprehension ability, respectively. The results of this study would be beneficial to the teaching and learning of English reading comprehension classes in the context of Dara Academy School.

Research Objectives

1. To compare the students' reading comprehension ability before and after the implementation of the Quizizz application

2. To explore the students' opinions about the implementation of the Quizizz application to enhance their reading comprehension ability

Research Methodology

Research Design

This study is a quasi-experimental research with a one-group pre-test-posttest design based on McMillan and Schumacher (2001 cited in Örnek, 2007:231-237) to compare the students' reading comprehension learning achievement before and after the implementation of the Quizizz program. Figure 1 illustrates the research design used in this study.

Figure 1 A One-Group Pretest-Posttest Design based on McMillan

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One-Group Pretest-Posttest

Group	Pretest	Treatment	Posttest
A	O_1	X	O_2

Time

</div>
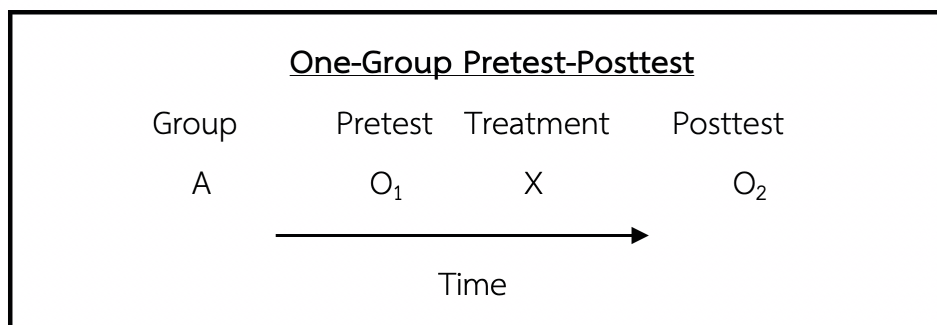
& Schumacher (2001)

The symbols above represent that the measurements are taken on the sample group both before (O_1) and after (O_2) receiving the treatment (X).

Population and Sample Group

The population in this research was 276 Mathayomsuksa 2 students who enrolled in the E22201 Supplementary English Course in the first semester

of the 2021 academic year at Dara Academy School, Chiang Mai, Thailand. There were six classes of Mathayomsuksa 2, and each class consisted of students with different English ability levels. The sample group consisted of 46 students of Mathayomsuksa 2/6 obtained by applying the cluster sampling method.

Research Instruments

In this study, three research instruments were employed, and they were divided into two types: treatment instruments and data collection instruments. The treatment tool consisted of three lesson plans with the use of the Quizizz application based on the 2008 Basic Education Core Curriculum with relevance to the E22101 English course description. The data collection instruments were composed of the pre-and post-test measuring the students' reading comprehension, and the questionnaire.

The lesson plans, the reading comprehension test and the questionnaire were verified using Index-Objective Congruence (IOC) by three language experts. The overall IOC value was 1, 0.95, and 1, respectively. According to Rovinelli and Hambleton (1977: online), the IOC used to evaluate the items was based on the score range from -1 to +1: Congruent = +1, Questionable = 0 and Incongruent = -1. The items with values less than 0.5 were altered, while those with scores equal to or more than 0.5 were accepted.

Lesson Plans

In this study, the treatment instrument was three lesson plans with the implementation of the Quizizz application. The application was managed as a teaching tool by combining slides and multimedia as an instructor-led experience with quiz and poll questions for teaching English reading comprehension at Dara Academy School. The students had to sign up for the platform by visiting joinmyquizizz.com and inputting the game code or clicking the link provided by the teacher at the beginning of class. Based

on Aim High Student's Book 2, the lesson plans covered three topics: Judging by Appearances, Great Explorers, and Surfing Superstar. Each lesson plan was 100-minute long, lasting for three weeks, and 50 minutes twice a week. The teaching and learning process was as followings: 1. The teacher introduced the use of the Quizizz application as a teaching and learning tool and how to access and join the application via the website joinmyquiz.com. and 2. The teacher taught the English literal reading comprehension with the implementation of the Quizizz application using the three topics; Judging by Appearances, Great Explorers, and Surfing Superstar focused on pre-reading questions, vocabulary, completion, identifying the main idea and supporting details, and answer the literal comprehension questions about each paragraph. The evaluation result of the lesson plans and the Quizizz lessons using the index of item-objective congruence (IOC) indicated that all items was 1, which meant that they were acceptable.

Reading Comprehension Test

The reading comprehension ability test in this study contained 40 multiple-choice questions which were designed to evaluate students' reading comprehension. The question items covered all topics addressed in class including English vocabulary, main ideas, and supporting details from the reading passages. The test took typically 50 minutes. The evaluation result of the reading comprehension test showed that all items in the reading comprehension test received the IOC scores higher than 0.50, which indicated that they were acceptable. The overall IOC value was 0.95.

Questionnaire

A 5-point Likert rating scale questionnaire with ten items was designed and utilized in this study in an attempt to explore the students' opinions about the implementation of the Quizizz application. It was divided into two sections. The first section was concerned with the background information of the respondents, and the second section focused on the levels

of the students' opinions on the use of Quizizz application in teaching English reading comprehension. The levels were Highest (5), High (4), Moderate (3), Low (2), and Lowest (1). The evaluation result of the questionnaire items using the index of item-objective congruence (IOC) showed that all items received IOC scores of 1, which indicated that they were accepted. The reliability of the questionnaire was also analyzed using Statistical Packages for the Social Sciences (SPSS) to obtain the Cronbach's Alpha value, which was .939. It indicated that the questionnaire was highly reliable.

Data Collection

The data collection procedures consisted of three main parts: pre-intervention period, intervention period, and post-intervention period as follows: In the first week, a pre-test was administered to measure the students' reading comprehension. They had 50 minutes to finish the text. After that, the students were required to install the Quizizz application onto their smartphones or computers. The students were assigned to learn English reading comprehension with the use of the Quizizz application twice a week for three weeks. Each week, the students used the application as a tool in their learning activities. They had two-class periods to finish a lesson. The interactive presentation created by the implementation of the Quizizz application with question-and-answer sessions, quizzes, and polls were used as an instructional medium to enhance the students' reading comprehension ability. In the last week, the posttest was administered to evaluate the students' English reading comprehension ability after the implementation of the Quizizz Application in the English classroom. After that, a questionnaire was provided to the students to investigate their opinions on the implementation of the Quizizz Application in their reading class.

Data Analysis

The pre-and post-test data, as well as the questionnaire data, were analyzed using descriptive statistics. The quantitative data derived from the pre-and post-test were analyzed using mean ($\bar{X}$), percentage, standard deviation (S.D.), and the paired sample t-test to compare the students' reading comprehension ability before and after the implementation of the Quizizz application. Regarding the questionnaire, the level of the students' opinions was interpreted based on Srisa-ard (2010 cited in Manprasert, 2017:1-75) as Highest (4.51-5.00), High (3.51-4.50), Moderate (2.51-3.50), Low (1.51-2.50), and Lowest (1.00-1.50). The questionnaire data were analyzed using mean and standard deviation.

Results

The findings are presented quantitatively based on the research objectives as follows:

Section 1 Comparison between the students' English reading comprehension ability before and after the implementation of the Quizizz

application

This section details the results of the mean scores which indicated the students' English reading comprehension ability before and after the implementation of the Quizizz application. The pre-and post-tests were used as the research instrument to measure the students' reading comprehension ability. After that, the acquired data were compared by using a paired-sample t-test. The following tables show the results of the data analysis.

Table 1   Comparison of English Reading Comprehension Pre-Test and Post-Test

According to Table 1, it could be concluded that there was a signif-

Test Type	N	Mean	Standard Deviation (S.D.)	Mean Difference	t	Sig. (2-tailed)
Pre-test	46	24.13	7.05	8.39	-11.86	.00*
Post-test	46	32.52	5.76			

*$p ≤ .05$

icant difference between the mean scores before and after the implementation of the Quizizz application. The mean pre-test score for English reading comprehension was 24.13, with a standard deviation of 7.05, and the mean post-test score was 32.52, with a standard deviation of 5.76. The post-test score was considerably higher than the pre-test score, with a difference of 8.39. Furthermore, the t-value was -11.86 which indicated that there was a statistically significant difference between the pre-test and post-test mean scores at .05 level. These findings suggested the implementation of the Quizizz application could enhance the students' English reading comprehension ability.

Section 2   Students' opinions about the implementation of the Quizizz

application

To investigate the students' opinions, they were requested to complete the questionnaire by evaluating each item on a five-point Likert scale from strongly agree, agree, uncertain, disagree, and strongly disagree. The mean and standard deviation was calculated from the questionnaire to represent the students' opinions as shown in Table 2.

Table 2   Students' Opinions Level about the Implementation of the Quizizz Application

Questionnaire Items	Mean	Standard Deviation	Levels of Opinion
1. Using the Quizizz application is simple.	4.46	0.62	High
2. Using the Quizizz application is enjoyable.	4.52	0.62	Highest
3. Using the Quizizz application has been able to increase my engagement in the classroom.	4.48	0.62	High
4. Using quizzes via the Quizizz application interactive slides have been able to increase my understanding.	4.65	0.60	Highest
5. Learning reading comprehension by using the Quizizz application enable me to understand the lessons better.	4.37	0.61	High
6. The Quizizz application enables me to learn reading comprehension systematically.	4.50	0.62	High
7. Using the Quizizz application enriches the learning content.	4.54	0.62	Highest
8. The Quizizz application is an effective tool for teaching and learning reading comprehension.	4.63	0.68	Highest

Questionnaire Items	Mean	Standard Deviation	Levels of Opinion
9. I like the Quizizz application because I can join in the activity anytime and also can re-join when I lost the internet signal.	4.48	0.89	High
10. I would like to use the Quizizz application more in the future because I believe that it can help me increase my reading comprehension achievement.	4.50	0.62	High
Total	4.51	0.65	Highest

N=46

According to Table 2, the overall mean score of the students' opinions about the use of the Quizizz application was at the highest level ($\bar{X}$ = 4.51, S.D. = 0.65). Most items were rated at a high level. When the items were taken into consideration, it was found that the item with the highest mean scores was item 4 with the mean of 4.65 and the standard deviation of 0.60. It was followed by item 8 ($\bar{X}$ = 4.63, S.D. = 0.68), item 7 ($\bar{X}$ = 4.54, S.D. = 0.62), item 2 ($\bar{X}$ = 4.52, S.D. = 0.62), item 6 and item 10 ($\bar{X}$ = 4.50, S.D. = 0.62), item 3 and item 9 ($\bar{X}$ = 4.48, S.D. = 0.62), item 1 ($\bar{X}$ = 4.46, S.D. = 0.62), and item 5 ($\bar{X}$ = 4.37, S.D. = 0.61) respectively.

To sum up, the results of this study indicated that the learning achievement of the students' English reading comprehension before and after learning with the implementation of the Quizizz application was significantly different at .05 level. The post-test mean score was higher than the pre-test

mean score. Furthermore, the pre-test and post-test average scores were 24.13 and 32.52, respectively. The findings revealed that the implementation of the Quizizz application could improve the students' reading comprehension ability. Additionally, the students had positive opinions at the highest level about the use of the Quizizz application. They strongly agreed that the Quizizz application was an effective tool for teaching and learning reading comprehension.

Discussion

According to the results, the reading comprehension ability of Mathayomsuksa 2 students at Dara Academy School significantly improved after the implementation of the Quizizz application. In other words, there was a significant difference between the pre-test and post-test mean scores before and after the Quizizz application was implemented. The findings revealed that the Quizizz application had a feature that allows the teacher to create their own activities within a playful environment. Consequently, it enabled the students to engage more deeply in learning which leads to an increase in their reading comprehension ability. This is consistent with the study of Pahamzah, Syafrizal, Juniardi & Sukaenah (2020:27-33) which revealed that Quizizz is a game-based educational app that introduces multiplayer activities into the classroom and makes in-class exercises more dynamic and enjoyable. It offers game-like features such as avatar, themes, memes, and music, all of which make studying fun and affect the students' reading comprehension. Additionally, that the Quizizz application provides a detailed summary of student responses which the students can track their progress on the leaderboard. At the same time, the teacher can monitor their progress and download the report to evaluate students' performance in order to determine the strengths and weaknesses of the students. This is in line with the study of Medvedovska, Skarlupina & Turchyna (2016:145-156). Quizizz can be integrated with Google

Classroom which facilitates assignment tracking and enhances the safety of students as they are authenticated using their school Google accounts. Moreover, Zhao (2019:37-43) revealed that Quizizz was an online formative assessment tool that helps teachers assess students' language as well as their curriculum knowledge. Besides, Quizizz is a gamified education application for language teaching and learning. Based on gamification, competition through exercises and quizzes between their classmates encourage the students to be motivated and engaged in the classroom. This is in line with Huang and Soman (2013: online), who stated that even though gamification is not directly associated with knowledge and skills, it affects students' behavior, commitment and motivation, which can lead to the enhancement of knowledge and skills afterward. This was consistent with the studies of Priyanti, Santosa, and Dewi (2019:71-80) and Zuhriyah and Pratolo (2020:5312-5317) who noted that using the Quizizz application had an impact on students' reading comprehension, resulting in the experimental group's mean score being significantly higher. According to the questionnaire result, the students expressed their opinions about the implementation of the Quizizz application at the highest level with a mean score of 4.51 and a standard deviation of 0.65. As Quizizz application is an instructional tool that allows the students to learn independently. It makes in-class exercises interactive and fun. With the gameful environment via the competition, pictures with memes, and music, the students are engaged and motivated in the learning process. This is in line with Miller (2016: online) and Aşıksoy & Sorakin (2018:334-346). Their studies mentioned that the colorful interface, avatars and music provided students with a similar experience as a game does. After they answer each question, Quizizz will show pictures with memes to tell whether the answer is right or wrong. This is a treat for students that help them to increase learning outcomes and decrease anxiety. Moreover, Boulden, Hurt and Richardson (2017:1-15) revealed that students are more focused and attentive to the quiz when using Quizizz. Additionally,

the variety of different question types like true or false, multiple choices, etc. allows the teacher to customize the learning process in several ways to meet the students' needs and make it more interesting. Besides, the teacher can also set the quizzes as homework so that students can work on the questions after class. This is consistent with the study of Dean (2017:8-11) and Namara & Murphy (2017: online) that Quizizz can be used to organize classroom activities and prepare tests in different question types that help teachers assess different levels of students' understanding. Additionally, the leaderboard in the Quizizz application is very beneficial for the students to see their progress and motivate competition in the classroom, where the students were driven to see their names at the top of the leaderboard, and thus, they were more attentive to their study. Also, Quizizz provides students' answers separately so that they can answer the questions at their own pace which helps them to relieve their stress and anxiety. Furthermore, this study revealed that Quizizz was user-friendly with immediate feedback which helps the students to improve their English reading comprehension. This finding confirms those of the previous studies (Chandler, 2015: online; Mei, Ju and Adam, 2018:208-212; Nanda, 2018: online; Zhao, 2019:37-43) that the participants were satisfied with the use of the Quizizz application to improve English language skills. It helps students appertain to quiz appreciation, learning effort, learning motivation, activities involvement and academic achievement (Morera, Antonio & Laura, 2012:39-45).

Knowledge

These Quizizz application lessons can be used as a tool or resource to motivate and inspire students to enhance their English reading comprehension ability. It should be a supplementary tool for learning enhancement and practicing both inside and outside the classroom. The learning process of the implementation of the Quizizz application is as follows:
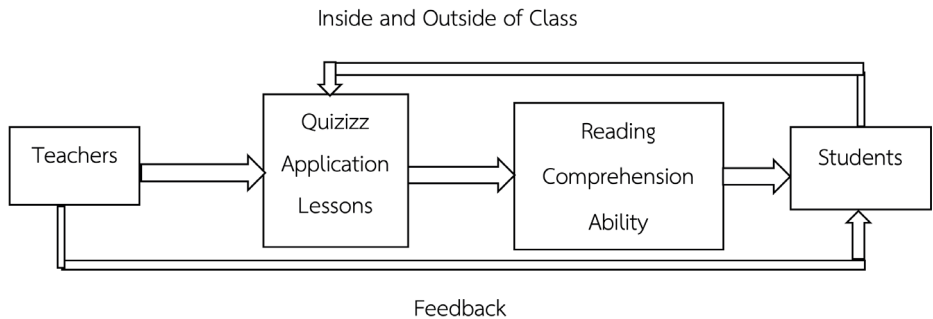
Inside and Outside of Class

Feedback

Figure 2: The Learning Process of the Implementation of the Quizizz Application

Conclusion

The results of the data analysis related to each research objective were presented that the students' English reading comprehension after the implementation of the Quizizz application improved significantly because there was a statistically significant difference between the pre-test and post-test mean scores at .05 level. The students expressed their positive opinions about the use of the application. The overall mean score was at the highest level ($\bar{x}$ = 4.51, S.D. = 0.65).

Suggestion

These Quizizz application lessons can be used as a tool or resource to motivate and inspire students to enhance their English reading comprehension ability. It should be a supplementary tool for learning enhancement and practicing both inside and outside the classroom. Furthermore, they should be used with other groups of participants with a

lengthier implementation period. Future researchers may implement the Quizizz application to enhance students' other English skills. A minority of Mathayomsuksa 2 (Grade 8) EFL students from Dara Academy in Chiang Mai, Thailand, participated in this study. It will be fascinating to do research with students at various levels of education to see if using the Quizizz app has comparable or different effects on reading comprehension skills. Moreover, researchers will be able to improve and strengthen the implementation of this application as well as the study's results by first studying it, allowing them to conduct more successful research; thus, teachers will be able to improve their creativity by making the Quizizz application unique, such as by including video and pictures in the Quizizz application based on the materials.

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