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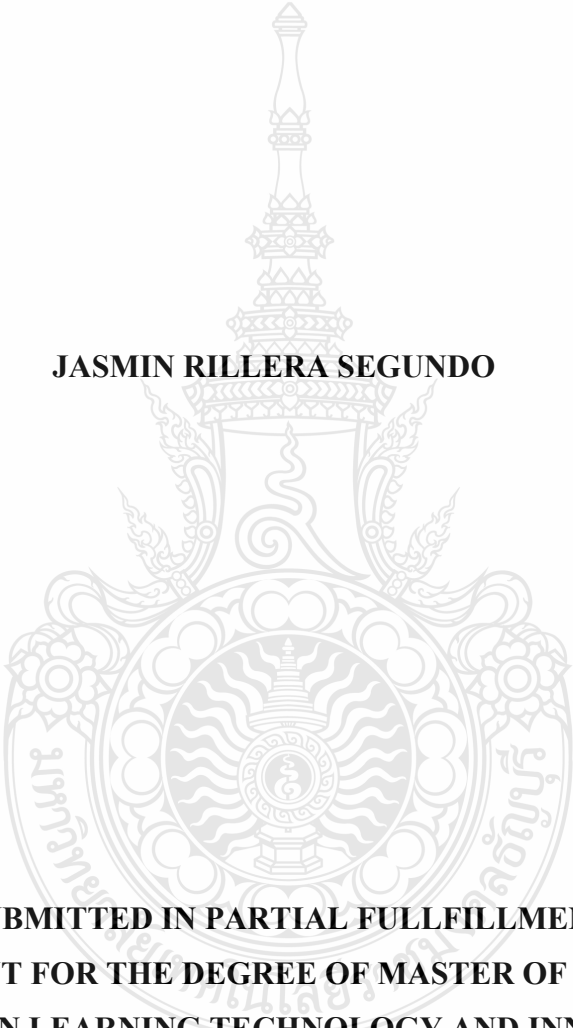
JASMIN RILLERA SEGUNDO

A THESIS SUBMITTED IN PARTIAL FULLFILLMENT OF THE
REQUIREMENT FOR THE DEGREE OF MASTER OF EDUCATION
PROGRAM IN LEARNING TECHNOLOGY AND INNOVATION
FACULTY OF TECHNICAL EDUCATION
RAJAMANGALA UNIVERSITY OF TECHNOLOGY THANYABURI
ACADEMIC YEAR 2023

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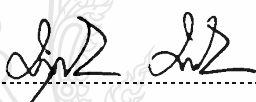ACADEMIC YEAR 2023**

Thesis Title	Efficiency of Online Learning Based on Gamification Concept
	to Enhance the English Proficiency of Grade 1 Students
Name - Surname	Ms. Jasmin Rillera Segundo
Program	Learning Technology and Innovation
Thesis Advisor	Assistant Professor Thidarat Kulnatarawong, Ph.D.
Academic Year	2022

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22 December 2022

Thesis Title	Efficiency of Online Learning Based on Gamification Concept to Enhance the English Proficiency of Primary 1 (Grade 1) Students
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ABSTRACT

The objectives of this study were to: 1) study the efficiency of online learning based on gamification concept to enhance the English proficiency of Primary 1 (Grade 1) students, 2) compare pretest and posttest of Primary 1 (Grade 1) students, and 3) study the satisfaction of Primary 1 (Grade 1) students who learned through online learning based on the gamification concept to enhance their English proficiency.

The sample group was 30 Primary 1 (Grade 1) students studying the English Conversation course at Prayaprasertsuntrasai (Krajang Singhaseni) school, Thailand in the academic year 2022 using a purposive sampling technique. The research instruments consisted of: 1) online learning based on gamification concept, 2) a questionnaire on content and media quality, 3) a learning achievement questionnaire, and 4) a questionnaire on students' satisfaction.

The research results revealed that: 1) the efficiency of online learning based on the gamification concept used to enhance the English proficiency of Primary 1 (Grade 1) students (E1/E2) was 80.22/85.50 according to the criteria of 80/80. The evaluation of content online learning based on the gamification concept to enhance the English proficiency of Primary 1 (Grade 1) students by the experts was totally appropriate at the excellent level ($\bar{X}$=4.93, SD=0.12), and the evaluation of media by the experts was totally appropriate at the excellent level ($\bar{X}$=4.73, SD=0.29), 2) the post-test scores were higher than the pre-test scores with a statistically significant level of .05, and 3) the satisfaction of students who learned through online learning based on the gamification concept to enhance their English proficiency was at the good level ($\bar{X}$=4.44, SD=0.62).

Keywords: online learning, gamification, English proficiency, efficiency

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CHAPTER 1
INTRODUCTION

1.1 Background of Statement

The development of information and communication technology in the Industrial 4.0 era has had a major influence on the teaching and learning process. Ease of access to technology has been used by teachers to facilitate the learning process. Access to technology can also improve the quality of education. Since the discovery of internet technology, almost anything has been possible in the world of education. Currently, students can learn not only anywhere but at the same time at any time with the existing electronic learning system facilities. E-learning is now increasingly recognized as a way to solve education and training problems, both in developed countries and developing countries. In principle, e-learning is learning that uses electronic services as a tool. As stated by Keengwe & Georgina in their research, it has been stated that technological developments provide changes to the implementation of teaching and learning (Keengwe & Georgina, 2012). Information technology can be accepted as a medium in carrying out the educational process, including helping the teaching and learning process, which also involves finding references and sources of information (Wekke & Hamid, 2013). The delivery of material online can be interactive so that learning participants can interact with computers as a learning medium. One example is that the teacher can provide students with material and assignments in the form of questions with the online gamification method through Quizizz or Kahoot! Platforms, by using gamification method in online learning students can do assignments interactively because in online platforms such as quizzes and Kahoot! Students can answer existing questions with direct feedback from the application in the form of a live score or other student scores directly which makes students compete to get good grades.

The use of instructional media in the teaching and learning process is an effort to increase the effectiveness and quality of the learning process which can improve the quality of student learning outcomes. The use of instructional media in the teaching and learning process has several benefits including: 1) Teaching will attract more students' attention so that it can foster learning motivation towards students, 2) Teaching methods

will be more varied, and 3) Students will make more interactions in learning activities because not only listening to the teacher's explanation but also other activities such as observing, demonstrating and so on (Wekke & Hamid, 2013).

That gamification, in general, can be interpreted as the use of game design elements in a non-game context. Gamification refers to the application of game mechanics and dynamics that are used to increase user motivation, enthusiasm, and engagement (Botra et al., 2014). The concept of gamification applies to lessons on using game domains to change our behaviour in non-game situations (Robson et al., 2015). The user in question is a group of consumers of a product, employees of an organization, students in a learning environment and other gamification users, depending on the domain of gamification usage. Several concepts are like gamification, such as the concept of "serious game", which emphasizes the incorporation of non-entertainment elements into the game environment (Schönen, 2014). A certain task is integrated into the game so that the task can be completed (Oja & Riekki, 2011). Furthermore, "play" is a free activity without obstacles, while "game" is limited in the form of actions that have rules and context (Stenros, 2017).

The concept of simple gamification application already exists in everyday life, for example, the accumulation program of purchasing a minimum of 10 travel tickets for Jatinang or Bandung gets a free ticket 1, shopping for cooking oil at a supermarket with a certain number of prizes, as well as the rules for purchasing 2 clothes, 1 free. clothes at prices follow the prices of clothes that are cheap on the condition that the brand must be the same. Such rules can motivate and increase customer loyalty. The principles of gamification are based on the ability to help create and maintain long-term relationships. This is achieved by integrating visually and engaging a game layer (for applications) that is designed to attract people, even people with no gaming experience.

Learning a foreign language is not an easy or enjoyable task, and most students struggle with it. It must be proficient in writing, reading, speaking, and listening. (According to Hayakawa et al). When learning a new language, the most difficult complex terms are usually the easiest to forget. As a result, in order to learn a second language more effectively, it is critical to connect the words to the real world. Teachers must use innovative teaching methods to engage resilient students in the classroom.

As Kiryakova et al. (2014) mentioned, the foremost issues in current education are associated with the lack of students' engagement and motivation to cooperate actively in the learning process. The second associated problem is that students' shyness and absence of confidence, which can be part of their cultural values lead them to resist participation in classroom activities (Rafatjou, 2019). Also, another vital problem is the teaching approach. Since teacher-centred learning has been prominent for such a long time in the Thai educational system, the students tend to resort to a rote-learning system where they learn their knowledge by memorizing concepts and ideas in addition, the use of technology is another concerning issue facing students. It distracts the students' attention in the classroom which becomes a trigger for inadequate academic motivation. Because of the factors mentioned above, the teachers need to find new techniques and approaches to induce students' activity and motivate them to participate in their language classroom. Gamification would be a sensible approach to fulfil this kind of gap in the education system.

Thus, this study focuses on the integration of gamification approach for English subject students to enhance English proficiency, motivation, and engagement in their English classrooms. With this approach, the students could develop their learning system in terms of learning behaviour, teamwork skills, engagement, motivation, and enjoyment based on gamification concept which indirectly impacts their knowledge and skills. Apart from the contributing to the students, designing gamified learning activities in the English classroom would allow the teachers to adapt their teaching styles to the studs needs, preferences, and requirements.

1.2 Research of Objectives

1.2.1 To study the efficiency of online learning based on gamification concept to enhance the English proficiency of grade 1.

1.2.2 To compare pretest and posttest of the Grade 1 students using the online learning based on gamification concept to enhance their English proficiency.

1.2.3 To study the satisfaction of students who learned with online learning based on gamification concept to enhance English proficiency.

1.3 Research Hypothesis

The following null hypothesis will be tested at the following level.

1.3.1 The students' achievement in English proficiency after studying through the online learning based on gamification concept was significantly higher at the .05 level.

1.3.2 The student's satisfaction with the online learning based on gamification concept to enhance English proficiency was at a high level.

1.4 Conceptual Framework

Independent variable   Dependent variable

Efficiency of online learning based on gamification concept to enhance the English Proficiency of grade 1 students	1. The students' achievement in English proficiency. 2. The student's satisfaction of the online learning based on gamification concept to enhance English proficiency.
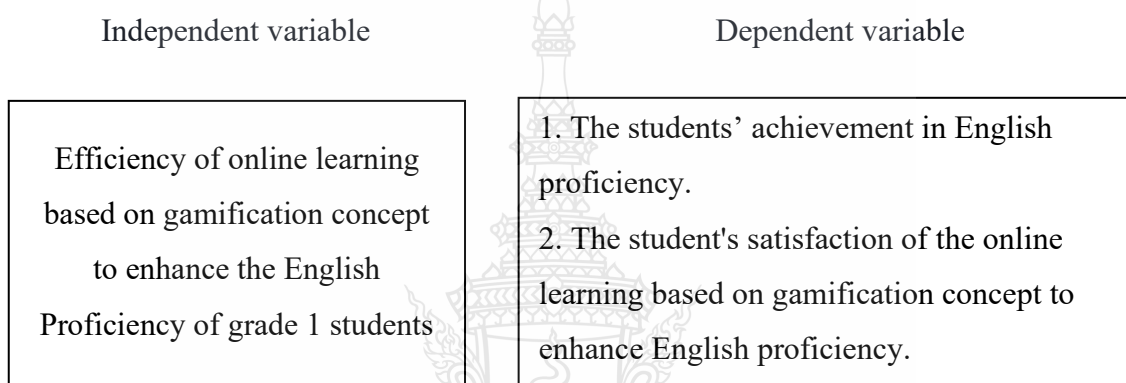
Figure 1.1 Conceptual framework of the online learning based on gamification concept to enhance the English proficiency of grade 1 students

1.5 Research of Methodology

1.5.1 The population: The population of this study was 80 students of grade 1 with English Conversation subject at Prayaprasertsuntrasai (Krajang Singhasanee) School, Thailand. The sample of this study were thirty (30) students of grade 1 with English Conversation subject at Prayaprasertsuntrasai (Krajang Singhasanee) School, Thailand during the school year 2022. They were selected by using purposive sampling as they were the students of the researcher who was responsible for teaching this course.

1.5.2 The research instruments consisted of 1) online learning based on gamification concept, 2) content and media quality questionnaire for online learning based on gamification concept to enhance English proficiency, 3) learning achievement questionnaire of students between pretest and post-test scores and 4) a questionnaire of

students' satisfaction the online learning based on gamification concept to enhance English proficiency.

1.5.3 The data were analyzed using E1/E2, Mean, standard deviation, and t-test.

1.5.4 Independent Variable is the online learning based on gamification concept to enhance the English proficiency of grade 1 students.

1.5.5 Dependent variables are the students' achievement in English proficiency and the student's satisfaction with the online learning based on gamification concept to enhance the English proficiency.

1.5.6 The content of this study is focused on finding the English proficiency of grade 1 students who enrolled in the English Conversation subject from the school year 2022. It would investigate the proficiency of the students in the English language as to grammar usage, vocabulary, and reading comprehension. Investigate their attitudes toward learning vocabulary through gamification concept approach.

1.5.7 Data amassment the researcher experimented with an experiment was one group pretest and posttest design; the population selected by purposive sampling, 30 students of grade 1 with English Conversation subject at Prayaprasertsuntrasai (Krajang Singhasanee) School, Thailand studying in the first semester of the education year 2022. The data amassment was 1) an experiment was one group pretest-posttest design. 2) The measure and statistics and amassment are pretest and posttest, questionnaire of satisfaction was E1/E2, Mean, Standard Deviation, t-tests.

1.5.7.1 A request for cooperation with students of Grade 1.

1.5.7.2 Plan the online learning with gamification concept to enhance the English proficiency of students is recording skills by analyzing the course in, course objective, determining behavioral objectives, and students' analysis.

1.5.7.3 Process learning by using the online learning with gamification concept to enhance the English proficiency of students, there are three steps goal of learning, creative thinking, construction knowledge; pretest; points; posttest; assess students' satisfaction; check pretest and posttest.

1.5.8 Data analysis

The statistics are used to analyze data.

1.5.8.1 The efficiency was criteria equal to E1/E2.

1.5.8.2 To Compare students' achievements in English proficiency between pretest and posttest by t-test.

1.5.8.3 To study the satisfaction of students who learned with online learning based on gamification concept by mean and standard deviation.

1.5.9 Research questions

1.5.9.1 What is online learning based on gamification concept? Does it improve the English capabilities of Grade 1 students? Does this method help for the online learning? Will it enhance the eagerness and curiosity of Grade 1 students in English conversation?

1.5.9.2 What are the differences between the pretest and post-test scores of those Prathom 1 students who have learned to spell and read English language skills through the game for reading skills using Baambozle for development in reading skills for Grade 1 students?

1.5.9.3 What is the student satisfaction level taught through the eLearning for reading and pronunciation skills using Bamboozle?

1.6 Definition and Scope of the Study

This study has some limitations that can identify the efficacy of online learning. Moving away from traditional learning practices, using gamification concept aims to address the limitations of teacher-centred approaches. It requires students to completely comprehend a lesson, regardless of the time and resources needed, before moving to the next level (Chargois, 2013). Furthermore, this educational model necessitates teachers to personalize the students' learning experience, allowing some learners to have additional time to understand the lesson or develop a skill. In a manner, gamification concept empowers students to progress at their own pace. In this context, the study is limited to the grade 1 at Prayaprasertsuntrasai (Krajang Singhasanee) School and doesn't embody the whole school system of Thailand. The weakness and shortcomings of English proficiency with these students help determine the functionality and effectiveness of the said study. With the help of gamification, the study was conducted during the 1st term of the academic year in 2022. The exploration of gamification for the development

of reading skills, broadening of vocabularies, and speaking skills for grade 1 at Prayaprasertsuntrasai (Krajang Singhasanee) School in this study was limited to simple online learning classes, as there was a controlled learning management system. The study's scope is mainly based on developing spelling and reading English language skills teaching programs to enhance the Learning capabilities of students' language skills from 3 sections of grade 1 students. Participants in this study include 30 students who enroll in the English Conversation subject in the academic year 2022. The instructor learns gamification system through online portals and other online learning bases/online gaming base platforms.

The scope of this study is divided into two phases:

1.6.1 Phase I: To synthesize learning process theories to develop reading skills using gamification concept.

1.6.1.1 Participants chosen for this study consisted of 30 students who were chosen through the purposive sampling method. Students were all the same with their studies and subject matter. All students have the same age and education environment.

1.6.1.2 This study was to study the effectiveness and development of English proficiency through gamification. And to emphasize how will it work while searching for learning strategies.

1.6.1.3 The theoretical perspectives of the review of these theories focus on four terms, namely: principles for the reading skills of students, teaching activities/strategies, the reading skill for students, teaching-learning environments.

1.6.1.4 Teaching-learning models. The reading skill for students could be to synthesize in English language subject.

1.6.2 Phase II: To develop the reading, speaking, and broadening of vocabularies in English with the help of gamification.

1.6.2.1 They developed gamification strategy for reading skills using Baambozle.

1.6.2.2 The efficacy and observation were used for online learning for reading skills using Baambozle.

1.6.2.3 The study students 'opinions on the efficacy of gamification for reading skills using the Baambozle.

1.6.2.4 The effectiveness of online learning gamification by organizing and summarizing the findings and challenges of online learning into positive, negative, mixed, and null findings. Particular attention is paid to the meta-analyses on the effectiveness of online learning, the heterogeneous outcomes of student learning, and the endogenous issue of learning environment choice.

1.7 Definition of Key Terms

1.7.1 Efficiency can be defined as the ability to achieve an end goal with little to no waste, effort, or energy. Being efficient means, you can achieve your results by putting the resources you have in the best way possible. Put simply, something is efficient if nothing is wasted, and all processes are optimized.

1.7.2 Online learning is used to refer to web-based training, e-learning, distributed learning, Internet-based learning, web-based instruction, cyberlearning, virtual learning, or net-based learning.

1.7.3 Enhancing English proficiency the ability to communicate effectively in English allows you to have more study and work options to explore. To improve your English proficiency, you need to develop your listening, reading, writing, and speaking skills.

1.7.4 Gamification is a technique that proposes dynamics associated with game design in the educational environment, to stimulate and have direct interaction with students, allowing them to significantly develop their curricular, cognitive, and social competencies. It is the use of techniques to engage people, motivate their action, and promote learning and problem solving.

1.7.5 Language Proficiency is the ability of students to use the English language to make and communicate meaning in spoken and written contexts while completing their program of study.

1.7.6 Satisfaction is the individual's feelings and attitudes towards the education process and the perceived level of fulfilment connected to the individual's desire to learn, caused by the. learning motivation.

1.7.7 Achievements the result of measurement to learners covering cognitive, affective, and psychomotor factors after following the learning process measured by using the relevant test instrument.

1.8 Significance of the Study

The research focus on the following:

1.8.1 This research provides a different understanding of education literature on online satisfaction of online learning based on gamification concept to enhance English proficiency. Nevertheless, encourages teachers to employ gamification concept learning in the educational process, reflecting on increasing education quality effectiveness.

1.8.2 This research helps to find strategies and efficiency and provides an additional understanding of online learning based on gamification concept to enhance the English proficiency of grade 1 students. Nevertheless, it encourages teachers to employ the online gamification concept in the educational process, reflecting on increasing the effectiveness of education quality-the platforms for replacing traditional methods commonly used to enhance the English proficiency of Thai grade 1 student.

1.8.3 This research also deals with similar problems that show the scarcity of educational research used to enhance the English proficiency of grade 1 students to develop pedagogical programs in creating interesting methods, techniques, and strategies pursued by English teachers. A different understanding of education literature of students encourages teachers to employ the online gamification concept in the educational process, reflecting on increasing the efficacy of the quality of education.

1.8.4 This research helps to find the strategies and efficiency of online gamification concept platform to replace traditional methods commonly used to enhanced English proficiency.

CHAPTER 2
REVIEW OF THE LITERATURE

This chapter focused on reviewing the previous studies related to the following area relevant to this research.

2.1 Online learning

2.2 English proficiency

2.3 Gamification concept

2.4 Efficiency of learning materials

2.5 Literature review of the relevant research

2.1 Online learning

2.1.1 Definition of online learning

Online learning is described as "studying experiences in synchronous or asynchronous environments the use of specific devices (e.g., mobile phones, laptops, etc.) with net access. In those environments, students may be anywhere (independent) to learn and interact with teachers and other students". The synchronous studying surroundings are based withinside the experience that students attend live lectures, there are real-time interactions among educators and learners, and there may be an opportunity for immediate comments, while the asynchronous study environment isn't well based. In a sort of learning surrounding, studying isn't to be had withinside the form of live lectures or classes; it's far to be in had specific studying structures and forums. Instant comments and instant reactions aren't finned in such an environment (Littlefield, 2018).

2.1.2 Component of online learning

Whether you are building an Online Learning framework for primary students, college students, or for professional development among your colleagues, the basic premise remains the same – the Online Learning Environment should enhance the learning potential of your candidates.

The SAMR model, created by Reuben Puentedura, is one example of how we can think about eLearning design. Just as with the SAMR, on one level eLearning Environments can be used as a direct replacement for what you would do in a physical

environment. On another level, it could be an augmentation of those same tasks with audio and pictures. To take it to another level, eLearning Environments can also provide opportunities to modify tasks for deeper learning with technology. Finally, successful eLearning Environments will also inspire learners to redefine their tasks in ways previously inconceivable. The following is an example of the interpretation of using eLearning to support reading responses.
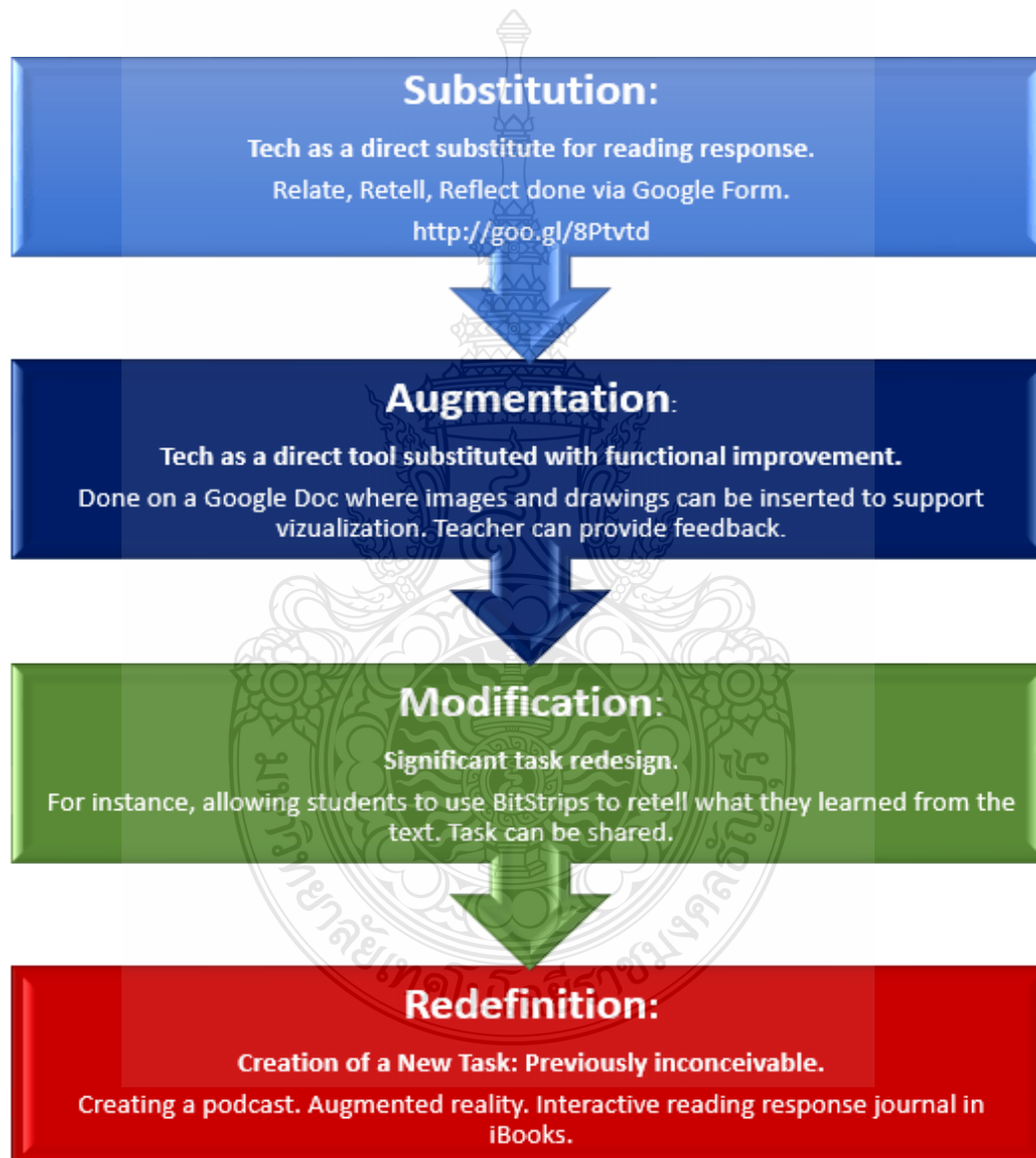
Figure 2.1 Interpretation of using e-learning.

2.1.3 Development of online learning

Many educational organizations and government groups are making continuous efforts, and vast resources are now being used for students' or workers' electronic learning opportunities. Networking organizations are rapidly generating new ways to ensure that educational development is effectively accessed digitally. Accordingly, the user pool has grown from convention l students o various employees or workers, as seen in Huge Free Online Classes. In institutional contexts, these free online classes are the most common forms of online education. The Management systems of Learning (LMSs) Lujan-Mora, S. Moodle is especially taught as a type of content management system (CMS). Based on the different interpretations of the structures and their key features, they are built to include cost-effective high-scale schooling cohorts. They are famous for advancing blended learning in secondary schools, public organizations, private companies, or comprehensive online learning. Such approaches are useful for broad organizations because lecturers and administrators can track participants' requirements to learn output. They will have the ability to receive any updates on learning performance at the core of current programs, approaches, and development in the organization. However, they do not have a platform to do any other works, and researchers also suggest that these standards. Other weaknesses also included high support and sales costs, unusable interface due to limited number of screens, compatibility with smart devices, students' rejection of mandatory software, and students' limited ability to take on developer roles despite learning enhancement objectives. In response to these problems, online learning platforms have been developed to provide online learners with an alternative to the conventional ways of receiving information across typically large e-learning networks. As a new type of digital instruction, the online learning platform can facilitate learning because of its convenient usability and ease of integration with virtual environments and online training systems.

2.1.4 The advantages of Online learning

Advantages of online learning:

Instructional Technology is highly beneficial for students, especially students pursuing a professional course (Mehra & Mital, 2007). Online learning is considered a boon due to the reasons given below:

Accessibility:

Online learning provides accessibility due to which a student can learn from anywhere in the world. This is an especially important consideration for students who wish to study in a different country. It doesn't matter where a student lives and what he wants to study- he can always find a suitable course or even a Degree Program that can be followed from home. Students learning options are not con strained by their geographic location.

Personalized Learning:

Online Learning system enables a student to determine and process his/her learning style, content, aim, current knowledge and individual skills. Therefore, person -specific education could be provided through creating individual learning styles. E-learning enables the individual to plan and direct his/her own learning. It has the potential to motivate, develop confidence and self-esteem, overcome many barriers that learners encounter, personalize the learning experience, widen access and improve the learning experience, while also helping people to develop their ICT skills.

Develops cognitive abilities:

In a study, it was found that E-Learning may be effective in developing cognitive abilities of pupil teachers (Singh & Mishra, 2009). It was found that students of e-learning program had higher achievement levels than their counterparts. A student can find unlimited information which he can access just by the click of a button. Many Online programs are offered by some of the most prestigious universities from all around the world. The student can take such a course online which can be helpful for the development of his cognitive abilities.

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Cost-Effectiveness: Online Learning is cost effective because less money is spent in travelling and in buying books or spending money in college context. Since it can be carried out at any geographic location and there are no travel expenses, this type of learning is less costly than learning at a traditional institute. Students who want to study through this mode need to have access to the necessary computer hardware as well as paying often substantial fees for access to an internet service provider (Kelllie & Ferguson, 1998)

Promotes Research: Students are excited to publish their work when they produce something of extremely high quality. With the permission of their teachers, they post the work on the web as examples for current and future students. Publishing students' work helps form a classroom legacy and archive of successful products.

Basic computer skills: Both on and off-campus students who choose to study online have an opportunity to gain technical skills in using Information

Communication Technology (ICT). These skills are likely to be useful to them in their professional life and all future endeavor which may be in themselves marketable features of their education.

Equal Opportunity to all: All students is equal, they are not treated differently based upon caste, creed, race, sex, religion, disability, etc. Rather Online Learning is a boon for learners who are disabled and face problems in commuting and for those sections of the society who live at far off places where the schools/colleges are at a distant place.

Self-Pacing: Due to individual differences, all learners are not able to complete the work/assignments at a given time due to which they have to face difficulties. Online learning allows students to work and learn at their own pace without the time restriction. The Learner is free to complete the course work according to his own will and he can take as much time as he requires without being termed as slow by his peers.

Globalization: New Technologies are narrowing geographical barriers in the way of education. The world has become a small village and the opportunities to have information about other nations are within our own access. The electronic Net world connects people all over the globe, therefore, it is vital to experiment with electronic learning situations wherein students share ideas and resources, access information about current events and historical archives, interact with experts, and use online databases.

2.1.5 Problems Associated with Online Teaching and Learning

There isn't any wide variety of technology to be had for online schooling however occasionally they devise a whole lot of problems. These problems and troubles related to modern technology vary from downloading errors, troubles with installation, login troubles, troubles with audio and video, and so on. Sometimes pupils reveal online teaching to be dull and unengaging. Online learning has a lot of time and versatility that students never find time to do it. Personal interest is likewise big trouble going to online learning. Students need two-manner interplay which is sometimes received hard to implement. The learning process cannot attain its complete capability till learner's exercise what they learn. Sometimes, the online content material is all theoretical and does now no longer allow students to exercise and learn effectively.

2.1.6 Personal and mental boundaries in online learning

This unit provides the table and discussion of personal and mental boundaries that students come across in their online learning.

Table 2.1 Personal and mental boundaries

Theme	Quotations
Scarcity of interest	1. I mess around, and I don't like to study online since the environment is inviting me to simply play and relax.
	2. Online learning is dull.
	3. Plenty of activities and much less time for teaching.
	4. less interaction with a classmate. Can't revel in the essence of school learnings.
Poor Understanding and Retentiveness.	1. The instructor didn't explain the lesson efficaciously because of confined time in online learning.
	2. I examine extra efficaciously if I see my instructor in character at the same time as discussing.
	3. I forgot easily what I have learned the next day.
	4. Students simply pay attention to the teacher to be able to answer the exercises, however, they're no longer learning.
Lack of Support	1. I am having a hardship in coping with the lessons, for there will be no other day to explain things further and my guardians or parents can't help me all the time.
	2. There are lots of activities and I can't do it alone without my parents and guardians' help.

Scarcity of Interest and Cooperation. The student's loss of interest and cooperation in online classes has become any other problem for teachers and parents. As there's no face-to-face interaction, increasingly more students lose interest in collaborating in online classes.

Poor Understanding and Retentiveness. Just like face-to-face, Online learning additionally also has a few disadvantages. One of that's the lack of retentiveness

in what they learned. Time is likewise an issue in online learning, teachers on occasion don't have sufficient time, to talk about all the lessons.

Lack of Support. While online studying is getting an extensive approach to persevering schooling since the pandemic, tough situations encountered by students emerged as they preserve to apply on-line studying. Having no guide from own circle of relatives or different humans is one of the tough situations students face as they move along.

With little assistance or no assistance at all, students tend to ignore the lessons as nobody might help them, even simply registering into the zoom class resulting in missing the whole class and lessons. Having no aid has led students unmotivated and uninterested in the online class. Chances are that students must simply play with their telephones in preference to attending online classes as nobody became looking after them. (Palloff & Pratt, 2000)

2.2 English Proficiency

2.2.1 Meaning of English proficiency

English language proficiency is described as the degree of learner's skill with which a learner can use a language, consisting of how nicely a learner, read, write, speak, or apprehend the language. In addition, it additionally refers to a learner's skill in the use of the English language for a selected purpose. English proficiency can be measured by the use of a proficiency test consisting of TOEFL (Test of English as a foreign language) and TOEIC (Test of English for International Communication (Richard et al; Davies et al.,1999).

2.2.2 Proficiency Stage of English language learners

The proficiency stage is the standard for assessing the development of obtaining a new language. It includes the cap potential of the learners. The cap potential itself is elaborated into four skills: they're listening, speaking, reading, and writing. TOEIC tests are the international standardize proficiency test. The skills which are tested in TOEIC proficiency test are the listening and reading comprehensions. It contains the familiar content for everyday English speaker. The TOEIC test is believed successful in assessing the student's progress in overall English language ability (Lougheed: 2006).

TOEIC divides the proficiency stage into six levels: they're novice, elementary, intermediate, simply working proficiency, advanced working proficiency, and general professional proficiency. Each level will be elaborated as follows:

2.2.2.1 General professional proficiency (905-990) is the extent of students who apprehend the conversation of native speakers of English. They can read adequately for most functional needs.

2.2.2.2 Advanced working proficiency (785-900) is the extent of students who can apprehend the most work-related situation. They can function their understanding in all situations but with a greater degree of facility and accuracy. The students also read many types of documents with varying degrees of ease and little use of a dictionary.

2.2.2.3 Basic working proficiency (605-780) is the extent of students who can understand explanations of work problems and discussion of current events by native speakers of English. They read with occasional use of the dictionary and also start to read many news articles and popular novels.

2.2.2.4 Intermediate (405-600) is the extent of students who can apprehend explanations related to the routine work and limited social conversation, the students only understand basic technical manual for beginners with high use of a dictionary.

2.2.2.5 Elementary (255-400) is the extent of students who can apprehend simple exchange in everyday professional or personal life with non-native English speakers. They only read the simple dictionary and mostly use a dictionary.

2.2.2.6 Novice (10-250) is the extent of students who can apprehend immediate simple exchange survival needs and use simple questions. They simplest recognize and examine easy notes and lists. They are likely to read and translate word by word.

2.3 Gamification

2.3.1 Meaning of Gamification

The term gamification has appeared in the academic literature since the discussion of Van Benthem as cited in Landers (2014) regarding logic games where he says "in principle, any logical task can be gamified. Van Benthem uses the term to mean

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the presentation or conversion of a non-game task into a game, which is still a layman's definition today. Gamification is the use of game attributes, as defined by Bedwell's taxonomy, outside the context of a game in order to influence learning-related behaviour and attitudes. Gamification is also defined as a learning approach using elements in games or video games with the aim of motivating students in the learning process and maximizing feelings of enjoyment and engagement with the learning process, besides this media can be used to capture things that interest students. and inspire him to continue learning (Lee & Hammer, 2011 as cited in Lui, 2013). Gamification is the process of using game elements to be adjusted in certain fields which aim to make them more interesting, easy to understand and creative (Pradana, et al., 2018).

2.3.2 Gamification in the theory of Education

Gamification of education is a strategy for increasing engagement by incorporating game elements into an educational environment (Dichev and Dicheva 2017). The goal is to generate levels of involvement equal to what games can usually produce (Fardo 2014). The main goals of gamification are to enhance certain abilities, introduce objectives that give learning a purpose, engage students, optimize learning, support behavior change, and socialize (Knutas et al. 2014; Krause et al. 2015; Dichev and Dicheva, 2017 & Borges et al. 2013).

2.3.3 Gamification game elements in learning (Mindy Jackson)

    1) Achievement (Progression)

    Examples

    (1) Points

    (2) Badges

    (3) Leveling

    (4) Leaderboards

    (5) Progression bars

    (6) Certificates

    Usefulness to Instructional Design

Game players get satisfaction from level accomplishment and skill development. Learners enjoy the same types of recognition.

The sense of progression motivates continued effort. Leaderboards provide a social status element, as do points and badges.

2) Rewards

Examples

(1) Equipment, tools, and other resources to use in-the game

(2) Collectibles

(3) Bonuses

(4) Power-ups

Usefulness to Instructional Design

Closely related to achievement, rewards can be scheduled into the learning experience.

Both variable and fixed reward schedules are popular game mechanics. Rewards can be based on completing several actions or being distributed at set intervals.

Rewards provide extrinsic motivation and recognition for time, effort, and skills attained.

3) Story

Examples

(1) Narrative arc

(2) Quest: The hero's journey

Usefulness to Instructional Design

An adventure setting, a thwarting disaster scenario, or a beating the competition narrative pique learner interest and motivation.

Put the learning experience into a compelling narrative setting. Add characters, conflicts, and resolutions to immerse the learner – and learner choices – into the storyline.

4) Time

Examples

(1) Countdown

(2) Schedule

Usefulness to Instructional Design

A common trope in board games, timers (counting total time) and countdown clocks create a sense of urgency. Even using a schedule of events, e.g., before I do B and C, I must complete A, helps focus learner attention to the task at hand.

    5) Personalization

        (1) Avatar selection

        (2) Avatar customization

        (3) Character naming

        (4) Interactive conversation (ICI)

Usefulness to Instructional Design

From selecting and customizing an avatar to choosing the look-and-feel options (e.g., a dreamy theme or a bright colour theme), accommodate individual preferences.

Use the information from learner input fields. For example, if the learner inputs a nickname into a text field, use that nickname within the environment or narrative.

Repurpose previous responses to provide a sense of intelligence or awareness: "I am known." For example, pull up an earlier answer response later in the game. Personalization ups learner engagement and motivation.

    2.3.4 Implementation of Gamification (True education)

Teachers can implement gamification through the subsequent examples:

    1) Giving points for meeting the academic objectives.

    2) Giving points for meeting procedural/non-procedural academic objectives.

    3) Creating playful barriers.

    4) Creating competition within the classroom.

    5) Using levels and checkpoints.

    6) Giving learning badges instead of points.

    2.3.5 Advantages of Gamification

    1) Facilitating student learning experiences in the classroom (Barab et al., 2009 in Lui, 2013).

2) Involving persistence, intelligence, practice, and learning with the aim of achieving success (Gray, 2012 in Lui, 2013).

3) Addressing students' emotional needs and providing opportunities to turn negative emotions into positive experiences (Lee & Hammer, 2011 in Lui, 2013).

4) Learning becomes more fun, encourages students to complete their learning activities, helps students focus more on and understands the material being studied, and gives students opportunities to compete, explore and excel in class (Jusuf, 2017).

5) Helping the development of cognitive and physical aspects of adults, increasing the level of active role of students in the class, and helping learners understand the material (Deese, 2016 in Setyowati, 2017).

6) Making students more active, directly involved and motivated in learning (Flores, 2015).

7) Allowing students to receive immediate feedback on their progress in the classroom and appreciation for completed assignments (Kapp & Cone, 2012 in Jusuf, 2017).

2.3.6 Effectiveness of Gamification

Gamification is exceptionally effective, in academic settings, e-learning settings and even for companies the usage of it to educate employees. Gamification as it triggers real, effective human feelings along with happiness, intrigue, excitement, and accomplishment. Across the globe, businesses, institutions, and family manufacturers are the usage of gamification, with marvelous results. (Shell Gatto 2020)

2.3.7 Use of gamification in the teaching of English

Gamification withinside the global education performs a crucial function to inspire the students to deeply interact with the teaching and learning technique executed withinside the classroom because the academics generally get problems to encouraging their students to stay tuned in the process of delivering the materials. Gamification gives a brand-new sort of interactive learning by which the teachers provide a more enjoyable and interactive way to the students so that the students do not only gain knowledge, buy also experience something new and interesting from gamification.

Several sorts of online gamification may be carried withinside the teaching of English, as follows:

2.3.7.1 Baamboozle

Bamboozle is an amusing game to play with our class as a bell ringer, check-in, or evaluate the lesson. perform from a distinct device like a projector, smartboard, or in an online lesson. It is easy to set up.

2.3.7.2 Word wall

With Word wall, we will make custom activities like quizzes, matchups, phrase games, and greater for our classroom. Word wall activities can be published immediately or downloaded as a PDF file. The printable may be used together with the interactive or as stand-alone activities. (García & Alvaro 2017).

2.3.7.3 Creativity of gamification

Creativity is the amendment of something that already exists into a new concept. In other words, two old concepts are mixed into a new concept (Semiawan, 2009, p.44). Creativity is a person's cap potential to create something new, the procedure of building thoughts that may be carried out to remedy problems and significant activities. Creativity includes intellectual and social procedures to generate newly advanced thoughts to be conveyed and shared. A person's creativity is ready the cap potential to process new thoughts in his thoughts that are supported via way of means the primary characteristic of intelligence.

2.4 Efficiency of Learning Material

Instructional materials have been observed as a powerful strategy to bring about effective teaching and learning. The importance of quality and adequate instructional materials in teaching and learning can occur through their effective utilization during classroom teaching. Instructional materials here include all the tools that the teachers can use to make the learning more interesting and memorable. According to Farombi, (1998), instructional materials include books, audio-visual, software, and hardware of educational technology. He further opines that the availability, adequacy, and relevance of instructional materials in classrooms can influence quality teaching, which can have a positive effect on students' learning and academic performance. The insight from

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Farombi on linking instructional resources to students' academic performance serves critical in the provision of quality education. According to Oni (1992), instructional resources are teachers' strategic factors in organizing and providing education. This is so because they help to elaborate a concept that the teacher could not, without an instructional material. This allows 2 students to learn more comfortably, therefore, influencing positively their academic performance. Writing on the role of instructional materials in teaching and learning, (Balogun 1982) commented that science education programs cannot be taught effectively without the existence of equipment for teaching.

2.5 Literature Review of the Relevant Research

Here are numerous research which can be applied to investigate to be accomplished via way of means of researchers, inclusive of studies performed via way of means of Yanes & Bououd (2019) who tested the usage of gamification and critical video games for studying English and the consequences of his studies have been that numerous matters had to be taken into consideration earlier than adopting gamification, for example, is SWOT; then studies performed via way of means of Dehghanzadeh, et al. (2019) who tested the usage of gamification to aid studying English as a 2d language and the consequences have been a way to layout virtual gamification and pupil studying experiences; research of Al-hadithy & Ali (2018) about gamification in learning English for academic purposes and the result was an increase in active learning, student involvement, self-efficacy, independent learning and an increase in student summative assessment after the application of gamification in the form of Kahoot.

García & Alvaro (2017) examined gamification in teaching English in Basic Education and the result was that gamification was an innovative method that could be useful in language teaching because it involved a variety of things such as effort, involvement, motivation and all the elements that played an important role in the acquisition of different linguistic skills.

Flores (2015) investigated the use of gamification to improve second language learning and the result was that the use of gamification in second language learning contributed positively to the student learning experience.

Xiang et al. (2014) tested the effectiveness of gamification in vocational engineering training and the result become widened learning and students had acquired a higher understanding of vocational engineering topics.

Lui (2013) conducted case study research on the use of gamification in vocabulary learning and the result was that students preferred to use technology to learn vocabulary and gamification was proven to improve student attitudes toward language learning.

Markopoulos et al. (2015) focused on gamification applications to engineering education. The research was based on an experimental group of 27 students, they were taught the course with the game elements in the first module, and then taught a non-gamified version of the advanced module in the next semester.

Barrio et al. (2016) performed an experimental studying to assess the perceived mastering advantage of gamified students' response systems (SRSs) over non-gamified SRSs. An evaluation of the advantages of the usage of SRS in lecture rooms is presented. The study tested if gamified SRSs bring to enhance motivation, attention, engagement, and performance.

Strecker et al. (2015) highlighted various game elements. While a non-gamified version of the course uses an online platform with discussion forums, a test on a group of fifty-five students was conducted, they were split into two experimental groups and two control groups, and the study showed higher scores to be statistically significant favour of the gamified group.

Sari et al. (2015) investigated the application of the concept of gamification to web-based learning of English tenses and the result was that learning web-based English tenses could improve students' ability to master tenses.

García & Alvaro (2017) tested gamification in teaching English in Basic Education and the result turned into gamification was an innovative technology that would be beneficial in language teaching because it involved a variety of things such as effort, involvement, motivation and all the factors that performed a critical function in the acquisition of various linguistic skills.

Manzano-Leon performed a meta-analysis of 57 'gamification in education' studies published from 2016 to 2020 based on the MDA framework [9]. As a result of the

analysis, the mechanics corresponding to the game rules among the gamified elements indicated a frequency of use corresponding to the following order: points, badges, rewards/rankings, levels/prizes, and achievements.

Thus, it could be said that these empirical studies highlighted the strong connection between gamification, motivation, engagement, effort, critical thinking skills, social skills, collaboration, interaction, and enjoyment. These essential components could help the students to achieve their success or accomplish their learning objectives with the forms of challenges in the gamefic exercises. The use of gamification, therefore, becomes an effective tool to revolutionize the traditional learning process into an educational gimmick that has crossed over between gaming elements and educational activities, which offers students an experiential element that is far more effective than traditional learning within the digital transformation trends in education.

CHAPTER 3
RESEARCH METHODOLOGY

This paper will examine the efficiency of online learning based on gamification concept to enhance the English Proficiency of grade 1 students and retort questions after a thorough investigation into the collection and analysis of data using quantitative methods. The researcher discusses the methodology used in this chapter. It is devoted to the method by which this study was conducted. The method is composed of the following components:

3.1 Research Design

3.2 Population and sample

3.3 Research Instrument

3.4 Data Collection

3.5 Data and Statistical Analysis

3.1 Research Design

The research design was conducted according to the following structure in the objective of the research; it has been moving with steps as flowing:

The researcher used a quantitative approach in experimental design for conducting this study. The data was collected in a quantitative or numerical form derived from the test, and the researcher used a one-group pretest-posttest design. This design included a pretest measure followed by a treatment and a posttest for a single group. An illustration of the design is as follows:

$$\text{Group:} \quad O_1 \quad x \quad O_2$$

O_1 = Measurement of the pretest score

X = Online learning based on gamification concept to enhance the English Proficiency

O_2 = Measurement of the achievement of the posttest score

3.2 Population and Sample

        3.2.1 The population of this study was 80 students of grade 1 in the academic year 2022 of Prayaprasertsuntrasai (Krajang Singhasanee) School, Thailand.

        3.2.2 The sample of this study were thirty (30) students of grade 1 with English Conversation subject at Prayaprasertsuntrasai (Krajang Singhasanee) School, Thailand during the school year 2022. They were selected by using purposive sampling as they were the students of the researcher who was responsible for teaching this course.

3.3 Research Instrument

        3.3.1 The online learning based on gamification concept to enhance the English proficiency of grade 1.

        Materials for online learning

        1) Google Classroom classes to enhance the English proficiency of grade 1 with English Conversation subject at Prayaprasertsuntrasai (Krajang Singhasanee) School, Thailand.

        2) Textbook

        The textbook used in this study is PW. Interprimary Conversation 1 which was used as the core book for the students in the first semester of the 2022 academic year at the participant's school of Prayaprasertsuntrasai (Krajang Singhasanee) School, Thailand.

        3) Games

        There were two games application that was used to teach vocabulary: Bamboozle and word wall. The reason why the researcher used these two games as parts of this study is to assess the students. Another reason was that all these two games were adaptable in terms of levels of challenge to fit the number of participants, their ages, teaching objectives, and learning environment.

        4) Lesson plans for the guideline to enhance the English proficiency

        In the current study, the researcher created the lesson plans for six weeks to plan what and how to teach the students each week.

        According to the course description, the students who enrolled in English Level 1 subject have to attend this course 1 time per week and 1 hour per class

(vocabulary teaching using Gamification is done only in the second half-hour of the teaching period). The details of each week are provided below:

Week 1: The researcher introduced herself as a teacher, contributed a course syllabus to students and provided them with the course description and other necessary details. After that, the teacher had the students introduce themselves one by one in front of the class in order to break the ice among them. After this, the researcher assigned the students to do a pretest containing new vocabulary they were going to learn from unit 1. Assigning the students to do the pretest provided the researcher with an opportunity to explore the students' background knowledge of the target vocabulary.

Week 2: The researcher had the students do a warm-up activity by asking them to think of vocabulary related to the topic of unit 1 as much as they could. To do the warm-up activity, the students were encouraged to get into English mode: being prepared for the activity in which English was used as the main language. Then, the researcher had the students play a game called "Baamboozle" in which they could learn new words by racing with each other to guess them with their pictures. The main purposes of this game are to introduce new vocabulary to the students and to stimulate them to memorize that vocabulary via question-answer competitions. When the game was finished, the researcher shifted the teaching topic to listening and speaking of 1. At the end of the class, the researcher asked the students to write at least 2 sentences using the new words and the grammar point they had learned and submit them to the researcher. By having the students do this, the researcher could explore whether the students could remember the vocabulary they had learned or not.

Week 3: the 1st time: The researcher helped the students complete listening exercises of unit 1, taught writing using the course handouts and had the students practice writing.

Week 4: The researcher had the students do a warm-up activity by asking them to think of vocabulary related to the topic of unit 2 as much as they could. To do the warm-up activity, the students were encouraged to get into English mode: being prepared for the activity in which English was used as the main language. Then, the researcher had the students play a game called "Bamboozle" in which they could learn new words by racing with each other to guess them with their pictures. The main purpose

of this game is to introduce new vocabulary to the students and stimulate them to memorize its definition via question-answer competitions. When the game was finished, the researcher shifted the teaching topic to listening and speaking the 2. At the end of the class, the researcher asked the students to write at least 2 sentences using the new words and the grammar point they had learned and submit them to the researcher. By having the students do this, the researcher could explore whether the students could remember the vocabulary they had learned or not.

Week 5: The researcher had the students do a warm-up activity by asking them to think of vocabulary related to the topic of unit 3 as much as they could. To do the warm-up activity, the students were encouraged to get into English mode: being prepared for the activity where English was used as the main language. Then, the researcher had the students play a game called "word wall" in which they could learn new words by racing with other teams to pass on sentences containing new words they should know with few mistakes in terms of both gist and sentence structure. The main purpose of this game is to introduce new vocabulary to the students and stimulate them to memorize its definition via memory competitions. When the game was finished, the researcher shifted the teaching topic to listening and speaking in unit 3. At the end of the class, the researcher asked the students to write at least 2 sentences using the new words and the grammar point they had learned and submit them to the researcher. By having the students do this, the researcher could explore whether the students could remember the vocabulary they had learned or not.

Week 6: The researcher helped the students complete listening exercises for unit 3. After that, the researcher assigned the students to complete a posttest and questionnaire to explore their vocabulary knowledge after learning through online Learning based on gamification and their attitudes towards learning through this approach.

3.3.2 Procedure

Step 1: The researcher studied theories of vocabulary assessment and attitude measurement to develop the questions in the pretest, posttest and questionnaire.

Step 2: The pretest, posttest and questionnaire were reviewed by the researcher's advisor and another experts in the field.

Step 3: The pretest, posttest and questionnaire were piloted with 30 grade 1 students who enrolled in the English conversation subject but were in not the same group as the participants of the study.

Step 4: A group of 30 grade 1 English students, who were enrolled in the subject of English Conversation at Prayaprasertsuntrasai (Krajang Singhasanee) School, were assigned to complete the pretest. The test time was approximately one hour.

Step 5: The researcher created the lesson plan based on applying games to teaching English vocabulary. This lesson plan was designed for six weeks and approved by the researcher's advisor and experts in the field.

Step 6: The researcher ran the class based on the lesson plan. The students were taught vocabulary through online learning based on gamification concept for six weeks. After that, they were assigned to complete both the post-test and questionnaire. The test time was approximately one hour.

3.3.3 Study the efficiency of online learning based on gamification concept to enhance the English proficiency of grade 1.

3.3.3.1 Find the efficiency of online learning based on gamification concept to enhance the English proficiency of grade 1 students according to E1/E2 = 80/80 (Chaiyong Brahmawong, 2009). (E1) is the percentage of the average or means of all scores the students earn from their activities or assignments, such as drills, exercises, project works, etc., or other types of formative evaluation. (E2) is the percentage of the average or means of all scores the students earn from their post-test, final examinations, and other summative evaluation.

3.3.3.2 Evaluation of online learning based on gamification concept to enhance the English proficiency of grade 1 from three content experts and three media experts.

1) The assessment of content quality aspects of online learning based on gamification concept to enhance the English proficiency of grade 1 students for content experts. The content experts who work in the field of English were asked to check the appropriateness of the content used in the online learning based on gamification concept.

2) The assessment of media quality aspects of online learning based on gamification concept to enhance the English proficiency of grade 1 students for media experts. The media experts who work in the field of information technology, computer and education technology or related fields were asked to check the appropriateness of the media used in the online learning based on gamification concept.

3) The researcher did the following steps:

Step 1: The assessment in this study has been developed to fit the study hypothesis. Consequently, it was developed based on both theories that have been utilized in this study. The study shows that using gamification method enhances and subsequentially improves the English proficiency of grade 1 students. The aim of questionnaire has two main sections,

Part 1: The first section aims to measure experts' opinion with the online learning based on gamification concept. This part was a close-ended questionnaire that was based on the five (5) point Likert-type scales. The participants were asked to rate their degree of agreement on each statement from numbers 1-5. The interpretation of each number is described as follows:

5	=	Excellent
4	=	Good
3	=	Average
2	=	Poor
1	=	Very Poor

Table 3.1 Range of mean and verbal interpretation

Range Value	Verbal Interpretation
4.50 - 5.00	Excellent
3.50 - 4.49	Good
2.50 - 3.49	Average
1.50 - 2.49	Poor
1.00 - 1.49	Very Poor

Part 2: This part was an open-ended questionnaire. The participants were asked to express their opinions and suggestions through online learning based on gamification concept.

Step 2: Before trying out the assessment, three measurement and evaluation experts who work in the field of measurement and evaluation or education were asked to check the appropriateness of the language used in the questionnaire. The data obtained were used to calculate the Item Objective Congruence index (IOC).

The results of evaluation assessment with content quality of item objective congruence index (IOC) by measurement and evaluation experts found that the value of item objective congruence index (IOC) was 0.97 then take the assessment to content experts for further evaluation and results of evaluation assessment with media quality of item objective congruence index (IOC) by measurement and evaluation experts found that the value of item objective congruence index (IOC) was 0.87 then take the assessment to media experts for further evaluation. Thus, the total mean score of the Item-Objective Congruence (IOC) Index is supposed to be higher than 0.5 for acceptable data.

The evaluation criteria were used for checking the congruence between objectives and items of the test as follows:

Table 3.2 Value of item objective congruence index (IOC) and verbal interpretation

+1	item is considered congruent with the objectives.
0	item is considered neutral in terms of whether it was congruent with the objectives.
-1	item is considered not congruent with the objectives.

The total mean score of the Item-Objective Congruence (IOC) Index is supposed to be higher than 0.5 for acceptable data.

Step 3: The assessment will be used by experts. For the assessment of content quality aspects of online learning based on gamification concept to enhance the English proficiency of grade 1 students for content experts and the

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assessment of media quality aspects of online learning based on gamification concept to enhance the English proficiency of grade 1 students for media experts.

3.3.4 The achievement assessment (Pretest and Posttest)

A pretest and posttest shared the same items. Both contained 20 questions related to vocabulary that they have learned in the class:10 items contained vocabulary taught with an online gamification concept Approach and the other 10 items contained vocabulary taught with a traditional teaching Approach. The students were assigned to do the pretest before learning vocabulary through gamification concept and do the posttest after learning through this approach. The researcher went through the following steps:

Step 1: The researcher selected the test types. Multiple-choice tests were chosen to use in the study.

Step 2: The second section of the questionnaire has been developed to measure students' academic achievement on online learning platforms.

Step 3: Three measurement and evaluation experts who work in the field of measurement and evaluation or education were asked to check the congruence between objectives and items in the test. The data obtained were used to calculate the Item Objective Congruence index (IOC).

The evaluation criteria were used for checking the congruence between objectives and items of the test as follows:

Table 3.3 Value of item objective congruence index (IOC) and verbal interpretation of achievement assessment

+1	a test item is considered congruent with the objectives.
0	a test item is considered neutral in terms of whether it is congruent with the objectives.
-1	a test item is considered not congruent with the objectives.

The total mean score of the Item-Objective Congruence (IOC) Index is supposed to be higher than 0.5 for acceptable data.

Step 4: Both the pretest and posttest were tried out with 30 students of grade 1 who have English conversation subjects who were enrolled in

Prayaprasertsuntrasai (Krajang Singhasanee) School but were not the samples of this study. After the tests have been tried out, used in finding the difficulty index, discrimination index and reliability index of the achievement test. it was found that the difficulty index should be between 0.2-0.8, the discriminant index should be 0.2 or higher and reliability should be 0.8 or higher using Kuder-Richardson's K-R#20 formula.

Step 5: The pretest and posttest are used with the participants to explore their vocabulary knowledge before and after learning vocabulary through online learning based on gamification concept.

3.3.5 The questionnaire on students' satisfaction with online learning is based on gamification concept to enhance English proficiency.

The questionnaire was used to ask about the students' learning using online learning based on gamification concept to enhance the English proficiency of grade 1 students. It was conducted in English version The researcher did the following steps:

Step 1: The questionnaire in this study has been developed to fit the study hypothesis. Consequently, it was developed based on both theories that have been utilized in this study. The study shows that using gamification method enhances and subsequentially improves the English proficiency of grade 1 students. The aim of questionnaire has two main sections,

Part 1: The first section aims to measure students' satisfaction with the online learning platforms. This part was a close-ended questionnaire that was based on the five (5) point Likert-type scales. The participants were asked to rate their degree of agreement on each statement from numbers 1-5. The interpretation of each number is described as follows:

5	=	Strongly agree
4	=	Agree
3	=	Undecided
2	=	Disagree
1	=	Strongly disagree

Table 3.4 Range of mean and verbal interpretation for students' satisfaction

Range Value	Verbal Interpretation
4.50-5.00	Satisfied Very Good
3.50-4.49	Satisfied Good
2.50-3.49	Satisfied Average
1.50-2.49	Satisfied Poor
1.00-1.49	Satisfied Very Poor

Part 2: This part was an open-ended questionnaire. The participants were asked to express their opinions and suggestions towards learning vocabulary through online learning based on gamification concept in terms of achievements and satisfaction.

Step 2: Before trying out the questionnaire, three measurement and evaluation experts who work in the field of measurement and evaluation or education were asked to check the appropriateness of the language used in the questionnaire. The data obtained were used to calculate the Item Objective Congruence index (IOC).

The evaluation criteria were used for checking the congruence between objectives and items of the test as follows:

Table 3.5 Value of item objective congruence index (IOC) and verbal interpretation of questionnaire on students' satisfaction

+1	item is considered congruent with the objectives.
0	item is considered neutral in terms of whether it was congruent with the objectives.
-1	item is considered not congruent with the objectives.

The total mean score of the Item-Objective Congruence (IOC) Index is supposed to be higher than 0.5 for acceptable data.

Step 3: The questionnaire will be used by the participants to explore their satisfaction with learning vocabulary through online learning based on gamification concept. The questionnaires were applied to grade 1-1 & grade 1-2 students.

3.4 Data Collection

    Step 1: Introduce students to online learning based on gamification using the Bamboozle platform to enhance the English Proficiency of grade 1 students of Prayaprasert School, Bangkok Thailand.

    Step 2: Produce the student's pre-test in order to receive the score.

    Step 3: Conduct the learning activities with students by utilizing the lessons through the Website.

    Step 4: Give student's a post-test after they studied with the digital platform, and the score to analyze by applying statistical methods.

3.5 Data and Statistical Analysis

    3.5.1 The researcher conducted the data analysis as the following procedures:

    3.5.1.1 Find the efficiency of online learning based on gamification using the Bamboozle platform to enhance the English Proficiency of grade 1 students according to E1/E2 = 80/80 (Chaiyong Brahmawong, 2009). (E1) is the percentage of the average or means of all scores the students earn from their activities or assignments, such as drills, exercises, project works, etc., or other types of formative evaluation. (E2) is the percentage of the average or means of all scores the students earn from their post-test, final examinations, and other summative evaluation.

    3.5.1.2 Compare the achievement test before and after using online learning based on gamification using the Bamboozle platform to enhance the English Proficiency of grade 1 students by applying the t-test dependent.

    3.5.1.3 Study the satisfaction of students in online learning based on gamification using the Bamboozle platform to enhance the English Proficiency of grade 1 students by mean and standard deviation.

    3.5.2 The basic statistics in data analysis are:

    3.5.2.1 The formula for calculating the arithmetic mean $(\overline{X})$ is:

$$\overline{X} = \frac{\sum X}{N}$$

Whereas $\overline{X}$ = Average or Arithmetic Mean

$\sum X$ = Sum of all score results

N = Number of students

3.5.2.2 The formula for calculating the standard derivation (S.D.) is:

$$S.D. = \sqrt{\frac{\sum (x - \overline{x})^2}{N}}$$

Whereas S.D. = Standard derivation

N = Number of students

$\overline{X}$ = Mean value

X = Student's score

3.5.2.3 The formula used to determine the quality of the instruments were: In finding content validity of the achievement test, we conducted the IOC formula (Item Objectives Congruence) by following the formula below:

$$IOC = \frac{\sum R}{N}$$

Whereas IOC = Index of correspondence between the test and the objective

$\sum R$ = Sum of individual expert's value

R = Expert's rating

N = Number of experts

3.5.2.4 The formula used in finding the difficulty index of the achievement test were

$$P = \frac{R_{H+}R_L}{N_H + N_L}$$

Whereas	P	=	difficulty level
	RH	=	the number of people who chose the highest option rate
	RL	=	the number of people who chose the lowest option rate
	NH	=	the total number of people in the high group
	NL	=	the total number of people in the low group

Table 3.6 Range of difficulty index and verbal interpretation

Difficulty Index	Verbal Interpretation
0.00-0.20	Very Difficult
0.21-0.40	Difficult
0.41-0.60	Average / Moderately Difficult
0.61-0.80	Easy
0.81-1.00	Very Easy

    3.5.2.5 The formula for calculating the item discrimination of the achievement test is:

$$r = \frac{R_H - R_L}{N_H \, or \, N_L}$$

Whereas	r	=	Discrimination index
	R_H	=	Number of correct responses in the high group
	R_L	=	Number of correct responses in the low group
	N_H	=	Total number of students in the high group
	N_L	=	Total number of students in the low group

Table 3.7 Range of discrimination index and verbal interpretation

Discrimination Index	Verbal Interpretation
0.40 and above	Very Discriminating / Very Good Item
0.30 to 0.39	Discriminating / Good Item
0.20 to 0.29	Moderately Discriminating Item
0.10 to 0.19	Not Discriminating / Marginal Item
Below 0.10	Poor / Questionable Item

3.5.2.6 The formula for calculating the reliability of the achievement test K-R#20 by Kuder-Richardson is:

$$\text{rtt} = \frac{k}{k-1}\left[1 - \frac{\sum pq}{S^2}\right]$$

Whereas rtt = Reliability index

k = Number of test items

p = The proportion of the correct answer

q = The proportion of the incorrect answer

S_2 = The variation of the entire test

3.5.2.7 The formula for calculating the variability of the achievement test is:

$$S_2 = \frac{n\sum fx^2 - \left(\sum fx^2\right)}{n(n-1)}$$

Whereas S_2 = Variance

n = Number of students

x = Achievement test score

f = Data of frequency

3.5.2.8 The formula used to verify the hypothesis were: The formula used in analyzing the differences in achievement scores using the dependent t-test was:

$$t = \dfrac{\sum D}{\sqrt{\dfrac{n\sum D^2 - \left(\sum D\right)^2}{n-1}}}$$

Whereas $\sum D$ = Sum of variance score of achievement test

$\sum D^2$ = Sum of different squares of achievement test scores

$\left(\sum D\right)^2$ = Sum of variance score of the square test

n = Number of students

D = Difference between pre-test and post-test scores

3.5.2.9 The formula for calculating the efficiency values of E1/E2 = 80/80 are as follows:

$$E1 = \dfrac{\dfrac{X_1}{A_1}}{} \times 100$$

Whereas E1 = Efficiency of the process

X1 = Average score all students earned from the test

A1 = Full scores of formative evaluations such as scores from activities, and assignments etc.

$$E2 = \dfrac{\dfrac{X_2}{A_2}}{} \times 100$$

Whereas E2 = Efficiency of the product

X2 = Average score all students earned from the test

A2 = Full scores of summative evaluations such as scores from post-test or final works assigned to the students

CHAPTER 4
RESEARCH RESULT

This chapter reports descriptive analysis and development of online learning based on gamification concept to enhance the English proficiency of grade 1 students. The findings are presented as follows:

4.1 Descriptive Data Statistic

4.2 Analysis Results

4.1 Descriptive Data Statistic

4.1.1 Study the efficiency of online learning based on gamification concept to enhance the English proficiency of grade 1.

4.1.2 Compare pretest and posttest of the Grade 1 students using the online learning based on gamification concept to enhance their English proficiency.

4.1.3 Study the satisfaction of students who learned with online learning based on gamification concept to enhance English proficiency.

4.2 Analysis Results

4.2.1 Study the efficiency of online learning based on gamification concept to enhance the English proficiency of grade 1.

4.2.1.1 online learning based on gamification concept to enhance the English proficiency of grade 1.

Table 4.1 Evaluation of efficiency of online learning based on gamification concept to enhance the English proficiency of grade 1

Items	n	$\overline{\text{X}}$	*SD*	Standard	E1/E2
Ongoing score	30	24.07	4.39	80	80.22
Post-test score	10	8.55	1.69	80	85.50

The mean score of ongoing score was 80.22, and the mean score of post-tests was 85.50, which indicated a substantial improvement upon the online

learning based on gamification concept to enhance the English proficiency of grade 1. The result revealed that the value of efficiency of E_1/E_2 as 80.22/85.50. To summarize, this online learning based on gamification concept to enhance the English proficiency of grade 1 is developed according to the standard criteria 80/80 defined.

             4.2.1.2 Evaluation of online learning based on gamification concept to enhance the English proficiency of grade 1 from three content experts.

             The 10 items of evaluation consist of the form issued by three content experts. This part was a close-ended questionnaire that was based on the five (5) point Likert-type scales. A 5-point rating scale is utilized in this section to represent the content experts' opinion. Each criterion rating is identified as illustrated in Table below.

Table 4.2 Results of evaluation of online learning based on gamification concept
            to enhance the English proficiency of grade 1 by three content experts

Evaluation Items	$\bar{X}$	SD	Result Interpretation
1. Content and learning objectives of the gamification are consistent.	5.00	0.00	Excellent
2. The content of the gamification is interesting.	5.00	0.00	Excellent
3. The content of gamification is accurate.	5.00	0.00	Excellent
4. The activities and content are suitable for learners.	4.67	0.58	Excellent
5. Each activity has an appropriate amount of content.	5.00	0.00	Excellent
6. The gamification's sorting content is acceptable.	5.00	0.00	Excellent
7. The content's language is appropriate for the learners.	4.67	0.58	Excellent
8. Activities are in line with the learning objectives.	5.00	0.00	Excellent

Table 4.2 Results of evaluation of online learning based on gamification concept
to enhance the English proficiency of grade 1 by three content experts (Cont.)

Evaluation Items	$\bar{\mathbf{X}}$	*SD*	Result Interpretation
9. There is a presentation format obtainable to pique the learners' interest.	5.00	0.00	Excellent
10. The gamification details outline is complete.	5.00	0.00	Excellent
Total	4.93	0.12	Excellent

From Table 4.2, the results of the content quality assessment of the online learning based on gamification concept to enhance the English proficiency of grade 1 evaluated by three content experts. The overall quality was excellent level ($\bar{X}$ = 4.93, *SD* = 0.12). When considering each item, it was found that content and learning objectives of the gamification are consistent, the content of gamification is interesting, the content of gamification is accurate, each activity has an appropriate amount of content, the gamification's sorting content is acceptable, activities are in line with the learning objectives, there is a presentation format obtainable to pique the learners' interest and the gamification details outline is complete were excellent level ($\bar{X}$ = 5.00, *SD* = 0.00), respectively.

4.2.1.3 Evaluation of online learning based on gamification concept to enhance the English proficiency of grade 1 from three media experts.

The 10 items of evaluation consist of the form issued by three media experts. This part was a close-ended questionnaire that was based on the five (5) point Likert-type scales. A 5-point rating scale is utilized in this section to represent the content experts' opinion. Each criterion rating is identified as illustrated in Table below.

Table 4.3 Results of evaluation of of student's satisfaction with online learning
based on gamification concept to enhance the English proficiency of grade 1
by three media experts

Evaluation Items	$\overline{\textbf{X}}$	SD	Result Interpretation
1. Learning English through games is easy to understand.	5.00	0.00	Excellent
2. English activities and content are presented in the right order.	4.67	0.58	Excellent
3. The baambozle game is simple to use and play.	4.67	0.58	Excellent
4. The pictures in the baamboozle game match the content.	4.33	0.58	Good
5. The baamboozle game images convey the meaning.	4.33	0.58	Good
6. The gamification activities are suitable for the students.	5.00	0.00	Excellent
7. The baambozle game's content is interesting.	5.00	0.00	Excellent
8. Students' have the desire to learn English through games.	4.33	0.58	Good
9. Through the use of games improves understanding of the content.	5.00	0.00	Excellent
10. The features of the gamification are clear and simple to understand.	5.00	0.00	Excellent
Total	4.73	0.29	Excellent

From Table 4.3, the results of the media quality assessment of the online learning based on gamification concept to enhance the English proficiency of grade 1 evaluated by three media experts. The overall quality was excellent level ($\overline{X}$= 4.73, SD = 0.29). When considering each item, it was found that learning English through

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games is easy to understand, the gamification activities are suitable for the students, the baambozle game's content is interesting, through the use of games improves understanding of the content and the features of the gamification are clear and simple to understand were excellent level ($\bar{X}$= 5.00, SD = 0.00), respectively.

4.2.2 Compare pretest and posttest of the Grade 1 students using the online learning based on gamification concept to enhance their English proficiency.

By completing the tests, students were able to learn English through the online learning based on gamification concept, and conduct Post-test, which was consistent with objective 2, illustrating the results of analysis as shown in Table 4.4

Table 4.4 Comparison of average score before and after of the Grade 1 students using the online learning based on gamification concept to enhance their English proficiency

Items	n	$\bar{X}$	SD	t-test	Sig. (2-tailed)
Pre-test	30	6.65	3.18	4.050	0.00**
Post-test	30	8.55	1.69		

**p< .05

Table 4.4 presented the efficiency of online learning based on gamification concept to enhance the English proficiency of grade 1. The mean score of pre-test was 6.65, and the score of standard deviation (SD) was 3.18. The result after applying the online learning based on gamification concept to enhance the English proficiency constituted a substantial improvement in students which translated into a high post-test 8.55 and standard deviation (SD) 1.69 and t-test analysis before and after the treatment 4.050 which demonstrated a considerable difference was statistically significant at the .05 level.

4.2.3 Study the satisfaction of students who learned with online learning based on gamification concept to enhance English proficiency.

Evaluation of students' satisfaction questionnaire on learned with online learning based on gamification concept to enhance English proficiency.

Table 4.5 Result of evaluation of students' satisfaction with online learning based on
the gamification concept to enhance English proficiency

Evaluation Items	X̄	SD	Result Interpretation
1. Learning English through games is fun.	4.60	0.50	Satisfied Very Good
2. Learning English through games creates a good atmosphere in the classroom.	4.40	0.62	Satisfied Good
3. Learning English through games provides you with more chances to participate in learning.	4.23	0.73	Satisfied Good
4. Learning English through games helps you memorize more words.	4.67	0.55	Satisfied Very Good
5. Learning English through games helps you spell words correctly.	4.50	0.57	Satisfied Very Good
6. Learning English through games provides you with a chance to practice using words you have learned.	4.30	0.53	Satisfied Good
7. Learning English through games makes you feel more enthusiastic about vocabulary learning.	4.37	0.81	Satisfied Good
8. Learning English through games develops your creativity.	4.43	0.68	Satisfied Good
9. Learning English through games develops your English proficiency.	4.50	0.63	Satisfied Very Good
10. Learning English through games improves your reading fluency.	4.40	0.56	Satisfied Good
Total	4.44	0.62	Satisfied Good

From Table 4.5, the results of evaluation of students' satisfaction with online learning based on gamification concept to enhance English proficiency evaluated by 30 students. The overall students' satisfaction was satisfied good level ($\bar{X}$ = 4.44, SD = 0.62). When considering each item, it was found that learning English through games helps you memorize more words was satisfied very good level ($\bar{X}$ = 4.67, SD = 0.55) and learning English through games is fun was satisfied very good level ($\bar{X}$ = 4.60, SD = 0.50), respectively.

CHAPTER 5
DISCUSSION AND RECOMMENDATION

In the study of the efficiency of online learning based on gamification concept to enhance the English Proficiency of grade 1 students, there are three major objectives 1) to study the efficiency of online learning based on gamification concept to enhance the English proficiency of grade 1, 2) to compare pretest and posttest of the Grade 1 students using the online learning based on gamification concept to enhance their English proficiency, and 3) to study the satisfaction of students who learned with online learning based on gamification concept to enhance English proficiency. The sample of this study were thirty (30) students of grade 1 with English Conversation subject at Prayaprasert School, in Ramkhamhaeng Bangkok Thailand, during the school year 2022. They were selected by using purposive sampling as they were the students of the researcher who was responsible for teaching this course. The research instruments consisted of 1) online learning based on gamification concept, 2) a pretest and posttest as an achievement assessment and 3) a questionnaire of students' satisfaction the online learning based on gamification concept to enhance English proficiency. The conclusion, discussion and suggestion of the research are as follows:

5.1 Discussion
5.2 Conclusion
5.3 Recommendation
5.4 Suggestion

5.1 Discussion

The discussion of the efficiency of online learning based on gamification concept to enhance the English Proficiency of grade 1 students is as follows:

5.1.1 Study the efficiency of online learning based on gamification concept to enhance the English proficiency of grade 1 of $E_1/E_2 = 80/80$

The construction of the experiment the mean score of the ongoing score was 80.22, and the mean score for post-tests was 85.50, which indicated a substantial improvement upon the online learning based on gamification concept to enhance the

English proficiency of grade 1. The result revealed that the value of efficiency of E_1/E_2 was 80.22/85.50. To summarize, this online learning based on gamification concept to enhance the English proficiency of grade 1 is developed according to the standard criteria 80/80 defined.

The findings from this experiment were consistent with several associated studies. performed via way of means of Dehghanzadeh et al. (2019) who tested the usage of gamification to aid in studying English as a 2d language and the consequences have been a way to layout virtual gamification and pupil studying experiences; Furthermore, Yanes & Bououd (2019) who tested the usage of gamification and critical video games for studying English and the consequences of his studies have been that numerous matters had to be taken into consideration earlier than adopting gamification, García & Alvaro (2017) tested gamification in teaching English in Basic Education and the result turned into gamification was an innovative technology that would be beneficial in language teaching because it involved a variety of things such as effort, involvement, motivation and all the factors that performed a critical function in the acquisition of various linguistic skills.

Evaluation of online learning based on gamification concept to enhance the English proficiency of grade 1 from three content experts. The results of the content quality assessment of the online learning based on gamification concept to enhance the English proficiency of grade 1 were evaluated by three content experts. The overall quality was excellent level ($\bar{X}$= 4.93, SD = 0.12). When considering each item, it was found that the content and learning objectives of the gamification are consistent, the content of the gamification is interesting, the content of gamification is accurate, each activity has an appropriate amount of content, and the gamification's sorting content is acceptable, activities are in line with the learning objectives, there is a presentation format obtainable to pique the learners' interest and the gamification details outline is complete were excellent level ($\bar{X}$= 5.00, SD = 0.00), respectively.

The result of the evaluation of three content experts in the E-Learning platform, most experts strongly agreed on the content of learning activities including the Content and learning objectives of the gamification are consistent, the content of the gamification is interesting, and the content of gamification is accurate, each activity has

an appropriate amount of content, The gamification's sorting content is acceptable, Activities are in line with the learning objectives. There is a presentation format obtainable to pique the learners' interest, the results of this experiment are consistent with the research results of Xiang et al., (2014) tested the effectiveness of gamification in vocational engineering training and the result become widened learning and students had acquired a higher understanding of vocational engineering topics.

Evaluation of online learning based on gamification concept to enhance the English proficiency of grade 1 from three media experts. The results of the media quality assessment of the online learning based on gamification concept to enhance the English proficiency of grade 1 were evaluated by three media experts. The overall quality was excellent level ($\bar{X}$ = 4.73, SD = 0.29). When considering each item, it was found that learning English through games is easy to understand, the gamification activities are suitable for the students, the baamboozle game's content is interesting, through the use of games improves understanding of the content and the features of the gamification are clear and simple to understand were excellent level ($\bar{X}$ = 5.00, SD = 0.00), respectively.

From the results of the evaluation of three media experts in the E-learning Platform, Most Expert Strongly agree on the media of learning activities including Learning English through games is easy to understand, the gamification activities are suitable for the students, and the baamboozle game's content is interesting, Through the use of games improves understanding of the content and, the features of the gamification are clear and simple to understand. And most experts agree on the media of English activities and content are presented in the right order, The baamboozle game is simple to use and play, and the pictures in the baamboozle game match the content, The baamboozle game images convey the meaning, Students' have the desire to learn English through games.

5.1.2 The compare pretest and posttest of the Grade 1 students using the online learning based on gamification concept to enhance their English proficiency.

The efficiency of online learning based on gamification concept to enhance the English proficiency of grade 1. The mean score of pre-tests was 13.30, and the score of standard deviation (SD) was 6.36. The result after applying the online learning based on gamification concept to enhance the English proficiency constituted

a substantial improvement in students which translated into a high post-test of 17.10 and standard deviation (*SD*) 3.38 and t-test analysis before and after the treatment of 4.050 which demonstrated a considerable difference was statistically significant at the .05 level.

According to the results findings of the pretest and post-test, which explore The efficiency of online learning base on gamification concept to enhance the English proficiency of Grade 1 students at a government school in Ramkhamhaeng, Thailand, the analysis of the student's pre-test and post-test were higher than the pre-test scores, Although the researcher calculated scores of words taught with or without games separately the results still indicated that the students' post-test scores of words taught with games were obviously increased, while the students' post-test scores of words not taught with games were almost not increased. Accordingly, it could be interpreted that the student's English Proficiency was significantly increased after learning English through Game-Based Learning.

5.1.3 Study the satisfaction of students who learned with online learning based on gamification concept to enhance English proficiency.

The results of the evaluation of students' satisfaction with online learning based on gamification concept to enhance English proficiency were evaluated by 30 students. The overall students' satisfaction was good level ($\bar{X}$= 4.44, *SD* = 0.62). When considering each item, it was found that learning English through games helps you memorize more words was excellent level ($\bar{X}$= 4.67, *SD* = 0.55) and learning English through games is fun was excellent level ($\bar{X}$= 4.60, *SD* = 0.50), respectively

Concerning student satisfaction, which explored the English Proficiency of grade 1 students' attitudes towards learning English through Game-Based Learning, the answers from the questionnaire were analyzed. The findings revealed that most of the participants agreed that learning vocabulary through Game-Based Learning was fun and could create a good atmosphere. Moreover, they also accepted that learning English through this approach not only helped them memorize words easier but also improved their spelling skills.

The findings of this current study indicated that the students agreed with the idea that Game-Based Learning helped them spell words correctly and also helped them memorize words easier. This was similar to the study of Lui (2013) conducted case

study research on the use of gamification in vocabulary learning and the result was that students preferred to use technology to learn vocabulary and gamification were proven to improve student attitudes toward language learning.

Not only that, but the students also expressed that they had fun and felt more enthusiastic about learning after learning English through this approach. These findings are consistent with the study of Al-hadithy & Ali (2018) about gamification in learning English for academic purposes and the result was an increase in active learning, student involvement, self-efficacy, independent learning and an increase in student summative assessment after the application of gamification in the form of Kahoot.

5.2 Conclusion

The analysis result of the above information answers the research objectives as follows:

5.2.1 The efficiency of the E-learning platform on Enhancing English Proficiency demonstrated that the coefficient of E_1/E_2 as the score during the learning process (E_1) was equal to 80.22, and the score of performance (E_2) was equal to 85.50, which was higher than the standard criteria 80/80 defined. It clearly showed that E-learning platforms using Gamification to enhance the English Proficiency of grade 1 students of Prayaprasertsuntrasai (Krajang Singhasanee) School, Thailand had adequate efficiency for teaching.

5.2.2 The result of students' learning achievement which was received from the E-learning platform using gamification to enhance English proficiency of grade 1 students of Prayaprasertsuntrasai (Krajang Singhasanee) School, Thailand showed that, at a significant level of .05, students' post-test scores were higher than their pre-test scores.

5.2.3 The student's satisfaction scores indicated a high level of satisfaction with the E-learning platform with a mean score of 4.44, particularly in terms of accessing educational content and engaging with other learning resources, which made it more appropriate for studying.

5.3 Recommendation

In this research, researchers have suggested that the results of the study should be applied as follows:

5.3.1 The development of an e-learning platform should be conducted step-by-step in accordance with best practices in this field, as this would allow the researcher to achieve the objective of constructing e-learning platform lessons, resulting in higher efficiency and a greater successful implementation.

5.3.2 Time of teaching should be well-managed. Since some of the participants of this study mentioned that learning through this approach took too much time, it is the teachers' responsibility to manage time well in order not to cause the students bored or affect other teaching contents.

5.3.3 Regarding students' various learning styles, they should be given the option of working on their own or in a small group when using the E-learning platform. This would benefit cooperative learning skills and peer correction.

5.4 Suggestions for Further Study

Based on the summary and discussion of the study, the researcher has several suggestions for further study as follows:

5.4.1 For further research, other qualitative methods such as interview, classroom observation or the teachers' reflection can be adopted in order to access more in-depth information. Besides, in terms of credibility, further research can be done with a larger number of participants.

5.4.2 E-learning platform should be used to develop other English language skills that students are interested in.

5.4.3 As a means of communication between students and instructors, a web board (chat and e-mail) should be set up.

5.4.4 Further research should be conducted on the use of e-learning platforms with other teaching methodologies, such as thinking process skills, systematic thinking process skills, and critical thinking process skills.

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APPENDICES
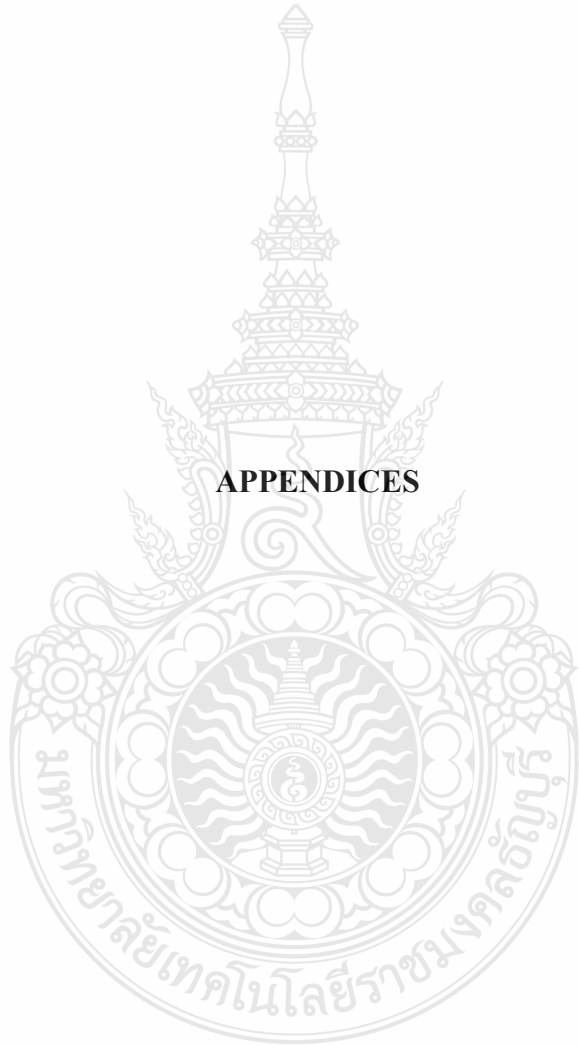
APPENDIX A

- List of Experts

- Sample Letter to Experts and Specialists for

  Research Tools Validation

List of Experts

Content Specialists

1. Dr. Joven M. Rivera

   Education Department, Naguilian National High School

2. Dr. Lorenz P. Corpuz

   Education Department, Naguilian National High School

3. Dr. Maritess R. Padilla

   Eduacation Department,Naguilian National High Sschool

Media Specialists

1. Asst. Prof. Dr. Sawanan Dangprasert

   Faculty of Technical Education, King Mongkut's University of Technology North Bangkok

2. Asst. Prof. Dr. Tanin Kongsila

   Department of Agricultural Extension and Communication, Faculty of Agriculture, Kasetsart University

3. Dr. Kittisak Paen-Ngam

   Nakhonnayok Primary Educational Service Area Office University Vice Chancellor

Assessment Specialists

1. Asst. Prof. Dr. Danucha Saleewong

   Faculty of Education, Valaya Alongkorn Rajabhat University

2. Asst. Prof. Dr. Haripon Thammanarak

   Faculty of Education, Chiang Mai University

3. Dr. Kawit Srisamrit

   Office of Educational Technology, Sukhothai Thammathirat Open University

MHESI 0634/2022

Office of the Dean, Faculty of Technical Education
Rajamangala University of Technology Thanyaburi
Klong Luang, Pathum Thani 12110 Thailand
Tel:+66-2-549-4710 Fax:+66-2-577-5049

20 June , 2022

Dear Dr. Joven M. Rivera
Education Department, Naguilian National High School

Subject: Respectfully Requesting for letter of Invitation of Experts for M.Ed. Thesis

 I am writing to request your assistance as an honorary external research reviewer in evaluating the research instruments of Ms.Jasmin Rillera Segundo. She currently taking the Master of Education Program in Educational Technology and Communications at the Rajamangala University of Technology Thanyaburi. She is working on the thesis entitled "The Development of Online Gamification Concept to Enhance the English Proficiency of Grade 1 Students." under Assistant Professor Thidarat Kulnattawarong, Ph.D. In this regard, I would like to request your valuable time to evaluate the research instruments as I strongly believe that your expertise will be of great value in improving the research instruments.

 If you have any questions or need further information, please contact Ms.Jasmin Rillera Segundo through her e-mail: jasminsegundo5@gmail.com

Yours sincerely,

(Assistant Professor Arnon Niyomphol)
Dean of Faculty of Technical Education

MHESI 0634.1/2022

Office of the Dean, Faculty of Technical Education
Rajamangala University of Technology Thanyaburi
Klong Luang, Pathum Thani 12110 Thailand
Tel:+66-2-549-4710 Fax:+66-2-577-5049

20 June , 2022

Dear Dr. Lorenz P. Corpuz
Education Department, Naguilian National High School

Subject: Respectfully Requesting for letter of Invitation of Experts for M.Ed.Thesis

    I am writing to request your assistance as an honorary external research reviewer in evaluating the research instruments of Ms.Jasmin Rillera Segundo. She currently taking the Master of Education Program in Educational Technology and Communications at the Rajamangala University of Technology Thanyaburi. She is working on the thesis entitled "The Development of Online Gamification Concept to Enhance the English Proficiency of Grade 1 Students." under Assistant Professor Thidarat Kulnattawarong, Ph.D. In this regard, I would like to request your valuable time to evaluate the research instruments as I strongly believe that your expertise will be of great value in improving the research instruments.

    If you have any questions or need further information, please contact Ms.Jasmin Rillera Segundo through her e-mail: jasminsegundo5@gmail.com

Yours sincerely,

(Assistant Professor Arnon Niyomphol)
Dean of Faculty of Technical Education

MHESI 0634.2/2022

Office of the Dean, Faculty of Technical Education
Rajamangala University of Technology Thanyaburi
Klong Luang, Pathum Thani 12110 Thailand
Tel:+66-2-549-4710 Fax:+66-2-577-5049

20 June , 2022

Dear Dr. Maritess R. Padilla
Education Department, Naguilian National High School

Subject: Respectfully Requesting for letter of Invitation of Experts for M.Ed.Thesis

      I am writing to request your assistance as an honorary external research reviewer in evaluating the research instruments of Ms.Jasmin Rillera Segundo. She currently taking the Master of Education Program in Educational Technology and Communications at the Rajamangala University of Technology Thanyaburi. She is working on the thesis entitled "The Development of Online Gamification Concept to Enhance the English Proficiency of Grade 1 Students." under Assistant Professor Thidarat Kulnattawarong, Ph.D. In this regard, I would like to request your valuable time to evaluate the research instruments as I strongly believe that your expertise will be of great value in improving the research instruments.

      If you have any questions or need further information, please contact Ms.Jasmin Rillera Segundo through her e-mail: jasminsegundo5@gmail.com

Yours sincerely,

(Assistant Professor Arnon Niyomphol)
Dean of Faculty of Technical Education

MHESI 0634.3/2022   Office of the Dean, Faculty of Technical Education
                                     Rajamangala University of Technology Thanyaburi
                                     Klong Luang, Pathum Thani 12110 Thailand
                                     Tel:+66-2-549-4710 Fax:+66-2-577-5049

20   June , 2022

Dear Asst.Prof.Dr. Sawanan Dangprasert
Faculty of Technical Education, King Mongkut's University of Technology
North Bangkok

Subject: Respectfully Requesting for letter of Invitation of Experts for M.Ed.Thesis

     I am writing to request your assistance as an honorary external research reviewer in evaluating the research instruments of Ms.Jasmin Rillera Segundo. She currently taking the Master of Education Program in Educational Technology and Communications at the Rajamangala University of Technology Thanyaburi. She is working on the thesis entitled "The Development of Online Gamification Concept to Enhance the English Proficiency of Grade 1 Students." under Assistant Professor Thidarat Kulnattawarong, Ph.D. In this regard, I would like to request your valuable time to evaluate the research instruments as I strongly believe that your expertise will be of great value in improving the research instruments.

     If you have any questions or need further information, please contact Ms.Jasmin Rillera Segundo through her e-mail: jasminsegundo5@gmail.com

Yours sincerely,

(Assistant Professor Arnon Niyomphol)
Dean of Faculty of Technical Education

MHESI 0634.4/2022

Office of the Dean, Faculty of Technical Education
Rajamangala University of Technology Thanyaburi
Klong Luang, Pathum Thani 12110 Thailand
Tel:+66-2-549-4710 Fax:+66-2-577-5049

20 June , 2022

Dear Asst.Prof.Dr. Tanin Kongsila
Department of Agricultural Extension and Communication, Faculty of Agriculture,
Kasetsart University

Subject: Respectfully Requesting for letter of Invitation of Experts for M.Ed.Thesis

   I am writing to request your assistance as an honorary external research reviewer in evaluating the research instruments of Ms.Jasmin Rillera Segundo. She currently taking the Master of Education Program in Educational Technology and Communications at the Rajamangala University of Technology Thanyaburi. She is working on the thesis entitled "The Development of Online Gamification Concept to Enhance the English Proficiency of Grade 1 Students." under Assistant Professor Thidarat Kulnattawarong, Ph.D. In this regard, I would like to request your valuable time to evaluate the research instruments as I strongly believe that your expertise will be of great value in improving the research instruments.

   If you have any questions or need further information, please contact Ms.Jasmin Rillera Segundo through her e-mail: jasminsegundo5@gmail.com

Yours sincerely,

(Assistant Professor Arnon Niyomphol)
Dean of Faculty of Technical Education

MHESI 0634.5/2022

Office of the Dean, Faculty of Technical Education
Rajamangala University of Technology Thanyaburi
Klong Luang, Pathum Thani 12110 Thailand
Tel:+66-2-549-4710 Fax:+66-2-577-5049

20 June , 2022

Dear Dr. Kittisak Paen-Ngam
Nakhonnayok Primary Educational Service Area Office
University Vice Chancello

Subject: Respectfully Requesting for letter of Invitation of Experts for M.Ed.Thesis

I am writing to request your assistance as an honorary external research reviewer in evaluating the research instruments of Ms.Jasmin Rillera Segundo. She currently taking the Master of Education Program in Educational Technology and Communications at the Rajamangala University of Technology Thanyaburi. She is working on the thesis entitled "The Development of Online Gamification Concept to Enhance the English Proficiency of Grade 1 Students." under Assistant Professor Thidarat Kulnattawarong, Ph.D. In this regard, I would like to request your valuable time to evaluate the research instruments as I strongly believe that your expertise will be of great value in improving the research instruments.

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Yours sincerely,

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Dean of Faculty of Technical Education

MHESI 0634.6/2022

Office of the Dean, Faculty of Technical Education
Rajamangala University of Technology Thanyaburi
Klong Luang, Pathum Thani 12110 Thailand
Tel:+66-2-549-4710 Fax:+66-2-577-5049

20 June , 2022

Dear Asst.Prof.Dr. Danucha Saleewong
Faculty of Education, Valaya Alongkorn Rajabhat University

Subject: Respectfully Requesting for letter of Invitation of Experts for M.Ed.Thesis

I am writing to request your assistance as an honorary external research reviewer in evaluating the research instruments of Ms.Jasmin Rillera Segundo. She currently taking the Master of Education Program in Educational Technology and Communications at the Rajamangala University of Technology Thanyaburi. She is working on the thesis entitled "The Development of Online Gamification Concept to Enhance the English Proficiency of Grade 1 Students." under Assistant Professor Thidarat Kulnattawarong, Ph.D. In this regard, I would like to request your valuable time to evaluate the research instruments as I strongly believe that your expertise will be of great value in improving the research instruments.

If you have any questions or need further information, please contact Ms.Jasmin Rillera Segundo through her e-mail: jasminsegundo5@gmail.com

Yours sincerely,

(Assistant Professor Arnon Niyomphol)
Dean of Faculty of Technical Education

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Rajamangala University of Technology Thanyaburi
Klong Luang, Pathum Thani 12110 Thailand
Tel:+66-2-549-4710 Fax:+66-2-577-5049

20   June , 2022

Dear Asst.Prof.Dr. Haripon Thammanarak
Faculty of Education, Chiang Mai University

Subject: Respectfully Requesting for letter of Invitation of Experts for M.Ed.Thesis

     I am writing to request your assistance as an honorary external research reviewer in evaluating the research instruments of Ms.Jasmin Rillera Segundo. She currently taking the Master of Education Program in Educational Technology and Communications at the Rajamangala University of Technology Thanyaburi. She is working on the thesis entitled "The Development of Online Gamification Concept to Enhance the English Proficiency of Grade 1 Students." under Assistant Professor Thidarat Kulnattawarong, Ph.D. In this regard, I would like to request your valuable time to evaluate the research instruments as I strongly believe that your expertise will be of great value in improving the research instruments.

     If you have any questions or need further information, please contact Ms.Jasmin Rillera Segundo through her e-mail: jasminsegundo5@gmail.com

Yours sincerely,

(Assistant Professor Arnon Niyomphol)
Dean of Faculty of Technical Education

MHESI 0634.8/2022

Office of the Dean, Faculty of Technical Education
Rajamangala University of Technology Thanyaburi
Klong Luang, Pathum Thani 12110 Thailand
Tel:+66-2-549-4710 Fax:+66-2-577-5049

20 June , 2022

Dear Dr. Kawit Srisamrit
Office of Educational Technology, Sukhothai Thammathirat Open University

Subject: Respectfully Requesting for letter of Invitation of Experts for M.Ed.Thesis

I am writing to request your assistance as an honorary external research reviewer in evaluating the research instruments of Ms.Jasmin Rillera Segundo. She currently taking the Master of Education Program in Educational Technology and Communications at the Rajamangala University of Technology Thanyaburi. She is working on the thesis entitled "The Development of Online Gamification Concept to Enhance the English Proficiency of Grade 1 Students." under Assistant Professor Thidarat Kulnattawarong, Ph.D. In this regard, I would like to request your valuable time to evaluate the research instruments as I strongly believe that your expertise will be of great value in improving the research instruments.

If you have any questions or need further information, please contact Ms.Jasmin Rillera Segundo through her e-mail: jasminsegundo5@gmail.com

Yours sincerely,

(Assistant Professor Arnon Niyomphol)
Dean of Faculty of Technical Education

APPENDIX B

- Assessment of content quality

- Assessment of media quality

- Questionnaire of Students' Satisfaction

- Achievement Test

Assessment of content quality aspects of online learning based on gamification concept

(For Content Experts)

Thesis Title	Efficiency of online learning based on gamification concept to enhance the English Proficiency of grade 1 students.
Name Surname	Ms. Jasmin Rillera Segundo
Program	M.Ed. (Learning Technology and Innovation)
Thesis Adviser	Assistant Professor Thidarat Kulnatarawong, Ph.D.

This assessment is a part of the thesis for a Master's degree in Education Program in Educational Technology and Communications, Rajamangala University of Technology Thanyaburi.

Research of Objectives:

1. To study the efficiency of online learning based on gamification concept to enhance the English proficiency of grade 1.

2. To compare pretest and posttest of the Grade 1 students using the online learning based on gamification concept to enhance their English proficiency.

3. To study the satisfaction of students who learned with online learning based on gamification concept to enhance English proficiency.

Directions: This questionnaire is designed to examine experts' opinions on learning English through online learning based on gamification concept. Please answer all of the questions to the best of your knowledge. Your answers will be kept confidential. The questionnaire is divided into 2 parts as follows:

Part1: Please write √ in the box that corresponds to your opinion.

Direction: Please mark √ in a box that best describes the degree of your agreement with each statement.

5	=	Strongly Agree
4	=	Agree
3	=	Undecided
2	=	Disagree
1	=	Strongly Disagree

Items	Level of agreement				
	5	4	3	2	1
1. Content and learning objectives of the gamification are consistent.					
2. The content of the gamification is interesting.					
3. The content of gamification is accurate.					
4. The activities and content are suitable for learners.					
5. Each activity has an appropriate amount of content					
6. The gamification 's sorting content is acceptable.					
7. The content's language is appropriate for the learners.					
8. Activities are in line with the learning objectives.					
9. There is a presentation format obtainable to pique the learners' interest.					
10. The gamification details outline is complete.					

Part2: Additional advice

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…………………………………………………………………………………………………

Assessment of media quality aspects of online learning based on gamification concept
(For Media Experts)

Thesis Title	Efficiency of online learning based on gamification concept to enhance the English Proficiency of grade 1 students.
Name Surname	Ms. Jasmin Rillera Segundo
Program	M.Ed. (Technology and Learning Innovation)
Thesis Adviser	Assistant Professor Thidarat Kulnatarawong, PhD.

This assessment is a part of the thesis for a Master's degree in Education Program in Educational Technology and Communications, Rajamangala University of Technology Thanyaburi.

Research of Objectives:

1. To study the efficiency of online learning based on gamification concept to enhance the English proficiency of grade 1.

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3. To study the satisfaction of students who learned with online learning based on gamification concept to enhance English proficiency.

Directions: This questionnaire is designed to examine experts' opinions on learning English through online learning based on gamification concept. Please answer all of the questions to the best of your knowledge. Your answers will be kept confidential. The questionnaire is divided into 2 parts as follows:

Part1: Please write √ in the box that corresponds to your opinion.

Direction: Please mark √ in a box that best describes the degree of your agreement with each statement.

$$5 \quad = \quad \text{Strongly Agree}$$
$$4 \quad = \quad \text{Agree}$$
$$3 \quad = \quad \text{Undecided}$$
$$2 \quad = \quad \text{Disagree}$$
$$1 \quad = \quad \text{Strongly Disagree}$$

Items	Level of agreement				
	5	4	3	2	1
1. Learning English through games is easy to understand.					
2. English activities and content are presented in the right order.					
3. The baamboozle game is simple to use and play.					
4. The pictures in the baamboozle game match the content.					
5. The baamboozle game images convey the meaning.					
6. The gamification activities are suitable for the students.					
7. The baamboozle game's content is interesting.					
8. Students' have the desire to learn English through games.					
9. Through the use of games improves understanding of the content.					
10. The features of the gamification are clear and simple to understand.					

Part2: Additional advice

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Questionnaire of Students' Satisfaction

Thesis Title	Efficiency of online learning based on gamification concept to enhance the English Proficiency of grade 1 students.
Name Surname	Ms. Jasmin Rillera Segundo
Program	M.Ed. (Learning Technology and Innovation)
Thesis Adviser	Assistant Professor Thidarat Kulnatarawong, Ph.D.

This questionnaire is a part of the thesis for a Master's degree in Education Program in Educational Technology and Communications, Rajamangala University of Technology Thanyaburi.

Research of Objectives:

1. To study the efficiency of online learning based on gamification concept to enhance the English proficiency of grade 1.

2. To compare pretest and posttest of the Grade 1 students using the online learning based on gamification concept to enhance their English proficiency.

3. To study the satisfaction of students who learned with online learning based on gamification concept to enhance English proficiency.

Directions: This questionnaire examines Grade 1 students' satisfaction with learning English through online learning based on gamification concept. Please answer all of the questions to the best of your knowledge. Your answers will be kept confidential. The questionnaire is divided into 2 parts as follows:

Part1: Please write √ in the box that corresponds to your satisfaction.

Direction: Please mark √ in a box that best describes the degree of your agreement with each statement.

5	=	Strongly Agree
4	=	Agree
3	=	Undecided
2	=	Disagree
1	=	Strongly Disagree

Items	Level of agreement				
	5	4	3	2	1
1. Learning English through games is fun.					
2. Learning English through games creates a good atmosphere in the classroom.					
3. Learning English through games provides you with more chances to participate in learning.					
4. Learning English through games helps you memorize more words.					
5. Learning English through games helps you spell words correctly.					
6. Learning English through games provides you with a chance to practice using words you have learned.					
7. Learning English through games makes you feel more enthusiastic about vocabulary learning.					
8. Learning English through games develops your creativity.					
9. Learning English through games develops your English proficiency.					

Items	Level of agreement				
	5	4	3	2	1
10. Learning English through games improves your reading fluency.					

Part2: Additional advice

……………………………………………………………………………………………………

……………………………………………………………………………………………………

……………………………………………………………………………………………………

Achievement Test

(For Measurement and Evaluation Experts)

Thesis Title	Efficiency of online learning based on gamification concept to enhance the English Proficiency of grade 1 students.
Name Surname	Ms. Jasmin Rillera Segundo
Program	M.Ed. (Learning Technology and Innovation)
Thesis Adviser	Assistant Professor Thidarat Kulnatarawong, Ph.D.

This assessment is a part of the thesis writing for a Master's degree in Education Program in Educational Technology and Communications, Rajamangala University of Technology Thanyaburi.

Research of Objectives:

1. To study the efficiency of online learning based on gamification concept to enhance the English proficiency of grade 1.

2. To compare pretest and posttest of the Grade 1 students using the online learning based on gamification concept to enhance their English proficiency.

3. To study the satisfaction of students who learned with online learning based on gamification concept to enhance English proficiency.
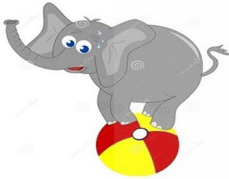
Directions: This questionnaire examines experts' opinions on learning English through online learning based on gamification concept. Please answer all of the questions to the best of your knowledge. Your answers will be kept confidential. The questionnaire is divided into 2 parts as follows:
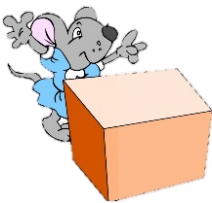
Part1: Please write √ in the box that corresponds to your opinion.
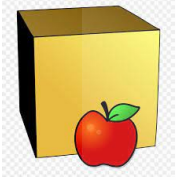
Direction: Please mark √ in a box that best describes the degree of your agreement with each statement.

Items	Level of Consistency		
	+1	0	-1
1. Where is the ball? a) It's on the box. b) It's under the box. c) Its beside the box. d) It's in the box			
2. Where is the ball? a) It's under the box. b) It's on the box. c) It's in the box. d) It's beside the box.			
3. Where is the cat? a) It's on the table. b) It's under the table. c) It's between the table. d) It's beside the table.			

4. Where is the cat? a) It's next to the table. b) It's in the table. c) It's on the table. d) It's under the table.			
5. Where is the boy? a) It's in the ball. b) It's on the ball. c) It's behind the ball. d) It's under the ball.			
6. Where is the bird? a) It's under the box. b) It's on the box. c) It's behind the box. d) It's between the box.			
7. Where is the cat? a) It's in front of the box b) It's under the box. c) It's behind the box. d) Its beside the box.			

8. Where is the girl? a) It's under the table. b) It's on the table. c) It's behind the table. d) It's beside the table.			
9. Where is the girl? a) It's in table b) It's on the table. c) It's beside the table. d) It's under the table.			
10. Where is the elephant? a) It's in the ball. b) It's under the ball. c) It's beside the ball. d) It's on the ball.			
11. Where is the mouse? a) Under b) On c) In d) Between			

12. Where is the mouse? a) On b) Under c) In d) Beside			
13. Where is the cat? a) In b) On c) Beside d) Between			
14. Where is the mouse? a) Beside b) On c) Under d) In			
15. Where is the mouse? a) On b) Between c) Under d) Behind			
16. Where is the mouse? a) Between b) In front of c) In d) Under			

17. Where is the mouse?
 	
    a) Under
    b) In
    c) Next to
    d) On			

18. Where is the apple?
 	
    a) In front of
    b) Between
    c) Under
    d) In			

19. Where is the cat?
 	
    a) On
    b) Next to
    c) Behind
    d) Between			

20. Where is the cat?
 	
    a) Between
    b) Under
    c) On
    d) Behind			

APPENDIX C

- **Result of content validity by index of item objective congruence (IOC) of achievement test**

- **Result of difficulty index (p) and discriminant index (r)**

- **Result of reliability of the achievement test**

- **Result of comparison of average score before and after**

Result of content validity by index of item objective congruence (IOC) of achievement test

The quality analysis of the achievement test was to determine the content validity by using the Index of Item Objective Congruence (IOC) formula, in which 3 measurement and evaluation experts were assigned to rate each question by considering the correspondence of the questions to the objectives of the total number of tests, 20 questions for the criteria used for consideration are questions with an IOC value of 0.50 or higher are valid questions. As for questions with an IOC value of 0.50 or less, they are questions that need to be improved or eliminated. After examining the consistency of the questions with the objectives from the experts, it was found that the experts agreed on 40 questions that were consistent, with an IOC of 0.5 or higher, and the researchers selected 20 questions to be used in pretest and posttest.

Table C.1 Result of content validity by index of item objective congruence (IOC) of achievement test

Items	Score of experts			Total score of experts	Index of Item Objective Congruence
	Expert 1	Expert 2	Expert 3		
1	+1	+1	+1	3	1.00
2	0	+1	+1	2	0.67
3	+1	+1	+1	3	1.00
4	+1	0	+1	2	0.67
5	+1	0	+1	2	0.67
6	+1	+1	+1	3	1.00
7	+1	+1	+1	3	1.00
8	+1	+1	0	2	0.67

Table C.1 Result of content validity by index of item objective congruence (IOC) of
achievement test (Cont.)

Items	Score of experts			Total score of experts	Index of Item Objective Congruence
	Expert 1	Expert 2	Expert 3		
9	+1	+1	+1	3	1.00
10	+1	+1	+1	3	1.00
11	+1	+1	+1	3	1.00
12	+1	+1	+1	3	1.00
13	0	+1	+1	2	0.67
14	+1	0	+1	2	0.67
15	+1	+1	+1	3	1.00
16	+1	+1	+1	3	1.00
17	+1	0	+1	2	0.67
18	+1	+1	+1	3	1.00
19	+1	+1	+1	3	1.00
20	+1	+1	+1	3	1.00

Result of difficulty index (p) and discriminant index (r)

**Table C.2** Result of difficulty index (p) and discriminant index (r)

Items	Difficulty Index (p)	Discriminant Index (r)	Level of quality		Result Interpretation
			Difficulty Index (p)	Discriminant Index (r)	
1	0.80	0.27	Easy	Moderately	Available
2	0.77	0.47	Easy	Very Discriminating	Available
3	0.80	0.40	Easy	Very Discriminating	Available
4*	0.90	0.07	Very Easy	Poor	Remove
5	0.73	0.53	Easy	Very Discriminating	Available
6*	0.87	0.27	Very Easy	Moderately	Available
7	0.70	0.33	Easy	Discriminating	Available
8*	0.83	0.20	Very Easy	Moderately	Available
9	0.77	0.20	Easy	Moderately	Available
10*	0.87	0.27	Very Easy	Moderately	Available
11*	0.90	0.07	Very Easy	Poor	Remove
12	0.73	0.40	Easy	Very Discriminating	Available
13	0.77	0.33	Easy	Discriminating	Available
14	0.70	0.47	Easy	Very Discriminating	Available
15	0.77	0.20	Easy	Moderately	Available
16	0.63	0.47	Easy	Very Discriminating	Available

Table C.2 Result of difficulty index (p) and discriminant index (r) (Cont.)

Items	Difficulty Index (p)	Discriminant Index (r)	Level of quality		Result Interpretation
			Difficulty Index (p)	Discriminant Index (r)	
17*	0.80	0.13	Easy	Not Discriminating	Remove
18	0.63	0.33	Easy	Discriminating	Available
19	0.60	0.27	Moderately	Moderately	Available
20	0.70	0.20	Easy	Moderately	Available

* Remove questions

From Table C.2, it was found that the difficulty index should be between 0.2-0.8 and the discriminant index should be 0.2 or higher. The whole test was performed using Kuder-Richardson's K-R#20 formula, 0.81, as shown in Table C.3.
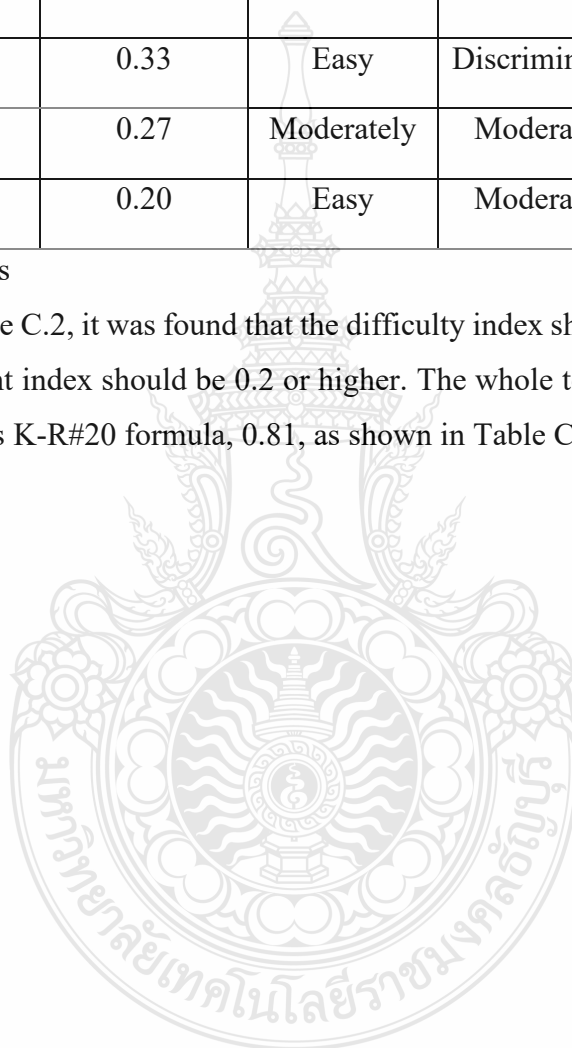
The result of reliability of the achievement test

Table C.3 The result of reliability of the achievement test

Students	Total score (X)	Total Score (X$^{2)}$)	$\sum$pq
N = 30	$\sum$X = 436 $(\sum$X$)^2$ = 190096	$\sum$ X^2 = 6882 N$\sum$ X^2 = 206460	3.87
S^2	$$S^2 = \frac{N\sum X^2 - (\sum X)^2}{N^2}$$ $$S^2 = \frac{30(6882) - (436)^2}{30^2}$$ $$S^2 = \frac{206460 - 190096}{900}$$ $$S^2 = 18.18$$		
r$_{tt}$	$$r_{tt} = \frac{k}{k-1}\left(1 - \frac{\sum pq}{S^2}\right)$$ $$r_{tt} = \frac{30}{29}\left(1 - \frac{3.87}{18.18}\right)$$ $$r_{tt} = 1.03(1 - 0.219)$$ $$r_{tt} = 1.03 * 0.781$$ $$r_{tt} = 0.81$$		

* The result of reliability of the achievement test is 0.81

Result of comparison of average score before and after

Table C.4 Comparison of average score before and after of 30 students

Students	Pretest score (10)	Posttest score (10)
1	7	9
2	10	9
3	10	10
4	4	6
5	3	10
6	9	10
7	10	10
8	9	10
9	3	6
10	10	10
11	9	10
12	4	10
13	9	10
14	3	9
15	10	8
16	8	9
17	9	10

Table C.4 Comparison of average score before and after of 30 students (Cont.)

Students	Pretest score (10)	Posttest score (10)
18	10	8
19	6	8
20	1	6
21	3	8
22	10	10
23	10	10
24	9	7
25	3	7
26	3	6
27	10	9
28	4	7
29	6	7
30	3	8

Table C.5 Comparison of the average scores before and after of the grade 1 students using the online learning based on gamification concept to enhance their English proficiency

Items	n	$\overline{\text{X}}$	S.D.	t-test	Sig. (2-tailed)
Pre-test	30	6.65	3.18	4.050	0.00**
Post-test	30	8.55	1.69		

**p< .05

Table C.5 presented the efficiency of online learning based on the gamification concept to enhance the English proficiency of grade 1. The mean score of the pre-test was 6.65, and the score of standard deviation (S.D.) was 3.18. The result after applying the online learning based on the gamification concept to enhance the English proficiency constituted a substantial improvement in students which translated into a high post-test 8.55 and standard deviation (S.D.) 1.69 and t-test analysis before and after the treatment 4.050 which demonstrated a considerable difference was statistically significant at the .05 level.
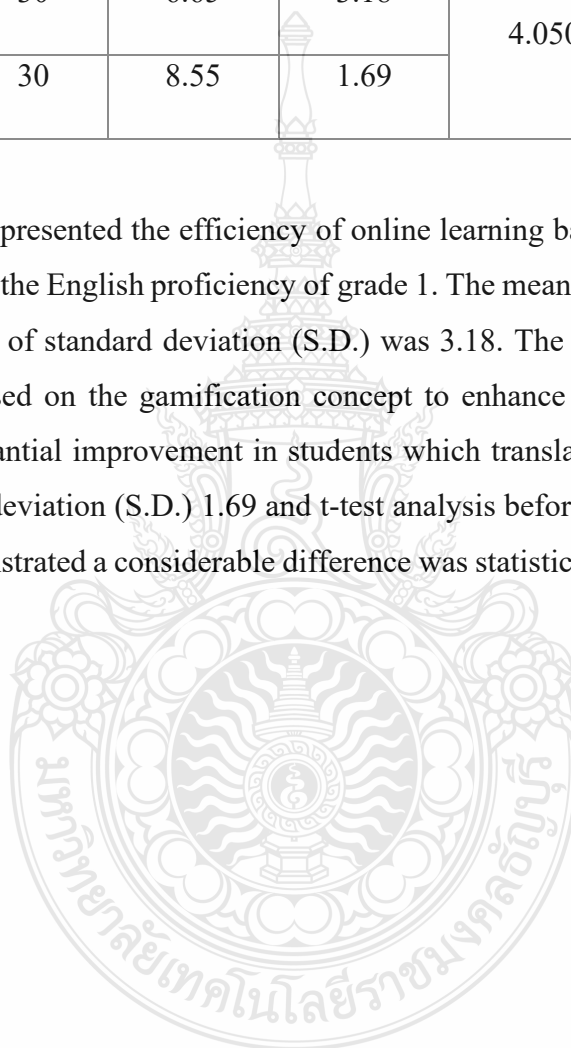
APPENDIX D

Example of online learning based on the gamification concept to enhance

the English proficiency of grade 1
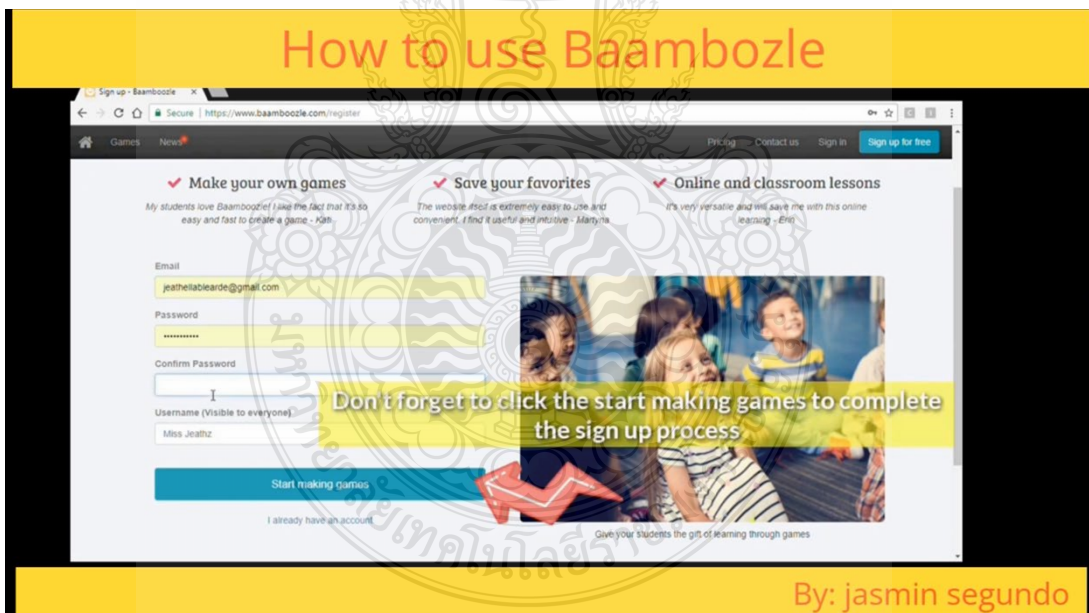
Figure D.1 Interface of the Baamboozle
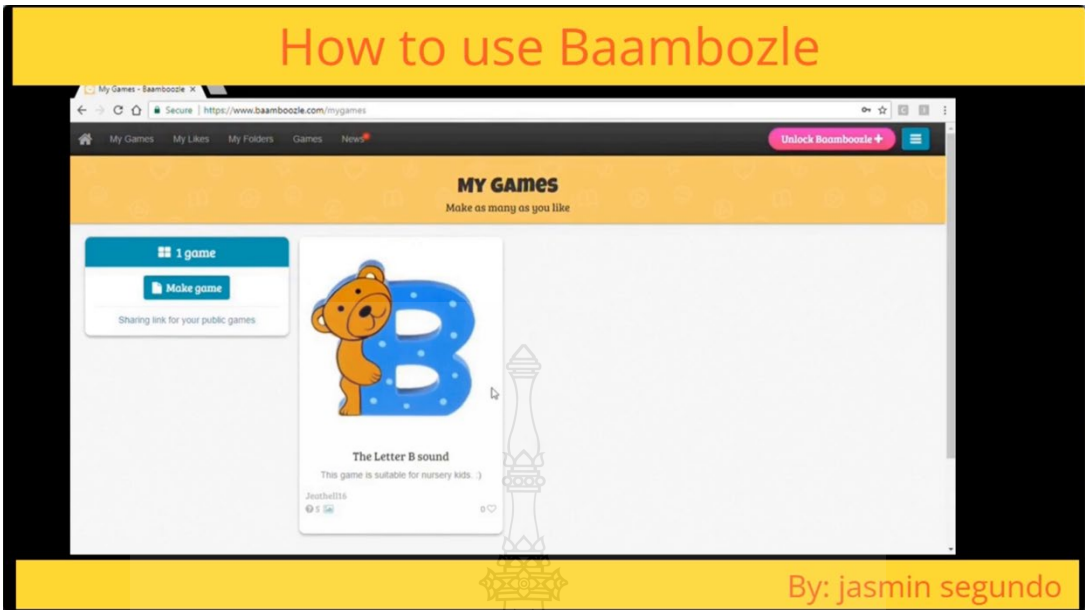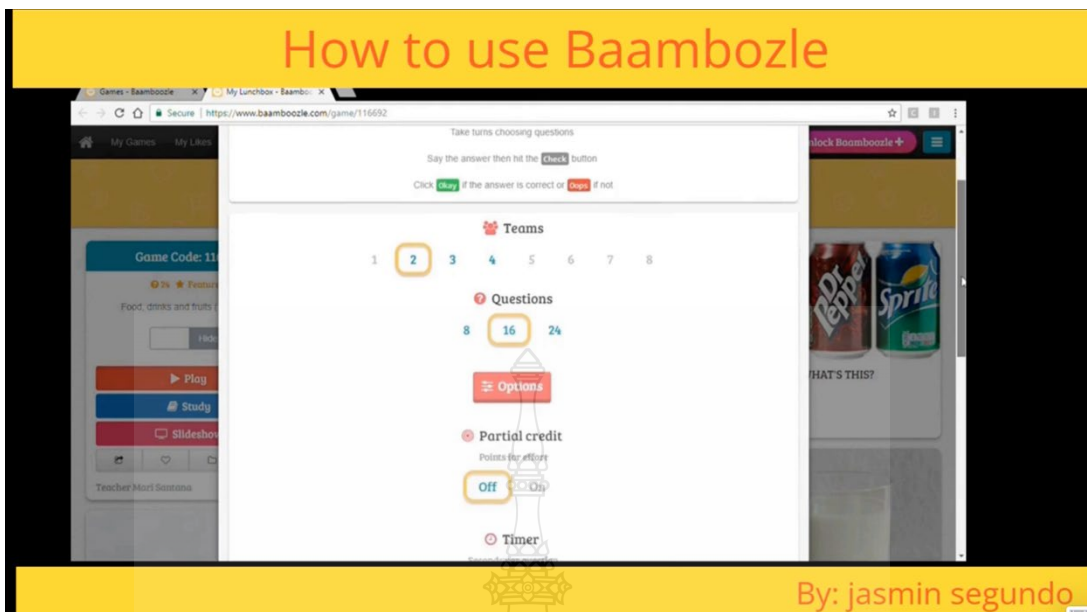

Figure D.2 Show the registration of Baamboozle

Figure D.3 Show created topic games

Figure D.4 Show the different topics of games

Figure D.5 Show numbers of teams players

Figure D.6 Show the numbers of questions
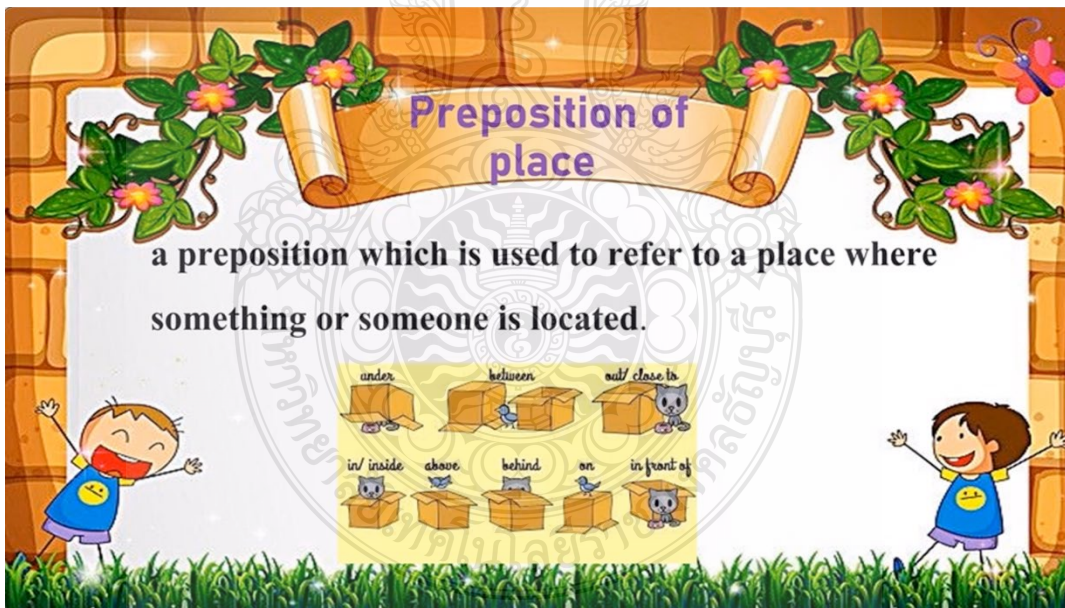
Figure D.7 Show the question and answer

Figure D.8 Show the questions

Figure D.9 Show the subject
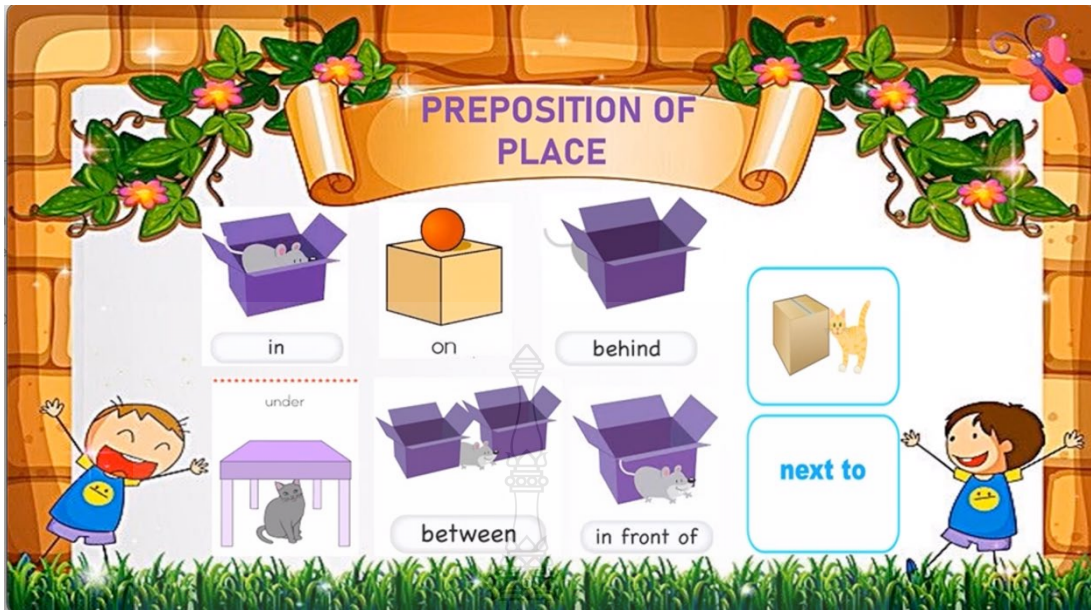

Figure D.10 Show the meaning of the topic
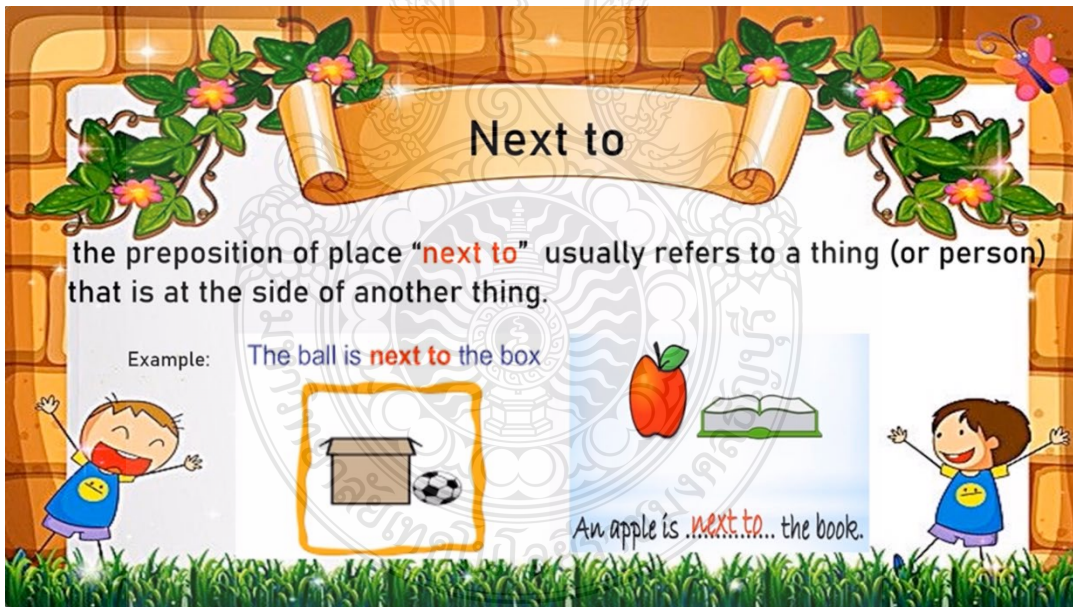
Figure D.11 Show the vocabularies

Figure D.12 Show the meaning of vocabulary

Biography

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