

THE GAMIFICATION IN TEACHING ENGLISH TO GRADE 5  
STUDENTS OF ST. ROBERTS'S INTERNATIONAL COLLEGE IN  
BANGKOK, THAILAND



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ABSTRACT

The purposes of this research were to: a) study the pre-test and post test scores of Grade-5 students at St. Robert's International College in their English subjects using Gamification, b) compare the pre-test and post-test scores of Grade-5 students at SRIC in their English subjects using Gamification, and c) study the level of satisfaction of grade 5 students at SRIC after using gamification model in their English subject. The target group was 15 Grade 5 elementary students of St. Robert's International College in the second semester of the academic year 2021, and the research tools were adopted pre-test and post-test, a satisfaction survey, and a self-constructed lesson plan on the implementation of gamification in a language classroom. Three experts checked the content validity of the lesson plan based on the index of item-objective congruence ratings. The data was analyzed using percentage, frequency, means and t-test. The findings of this study showed that a) the average post-test scores of Grade-5 students was mean= 8.70, S.D. = 1.38, and the average score of the pre-test mean= 6.65, S.D. = 2.16 , b) the comparison of pre-test and post-test were statistically significant at a level of 0.001 with the level of ( $p < 0.05$ ), thereby accepting the research hypothesis that there is a significant difference in the pre-test and post-test score, and c) there were 13 students or 90% had the most satisfied level and 2 students or 10% had very satisfied level.

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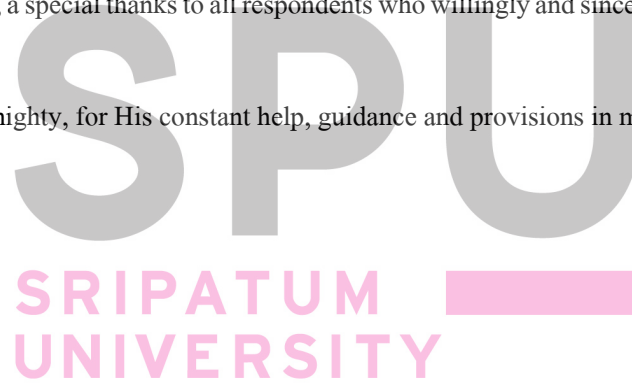
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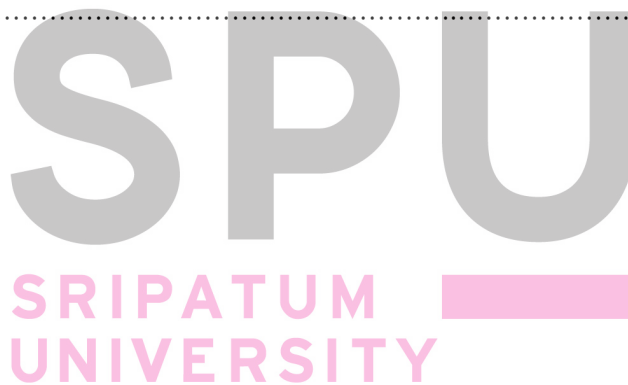
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# CHAPTER 1

## INTRODUCTION

### Background of the Study

Today's fast changing world caused by the rapid advancement of technology has pushed the education system's need for transformation on its methods in reaching the goal of ensuring student achievement. By shifting from the industrial age's "factory model" to information age's "inquiry model," educators believe that providing quality education is more attainable and will surely open doors for students to reach success. This paradigm shift in the realignment of practices is essential to reap concrete results (Dolence and Norris, 1995). To cope with the present demands, schools have embraced different innovations in education in order to provide better education for all and prepare students by equipping them with the 21st century skills (The Sunday Observer, 2011). However, simply choosing and applying new trends such as adaptation to technology and increasing availability of technological resources in a school doesn't directly denote a shift in the system. Schools could be using modern means of implementing curriculum and teaching processes but still remain trapped and boxed in the industrial age's education system, a one-size-fits-all system where students are forced to learn in a uniform manner and diversity of talents and abilities are constricted (Jacobs, 2014). This so-called "factory" needs to be closed as this system is no longer applicable and effective in today's setting (Leland and Kasten, 2002)

The 21<sup>st</sup> century students find the current education system boring due to repetitive tasks needed to be accomplished in order to pass a certain subject or level. The mindset of attending school and working hard earn good grades clouds the minds of the youth today with so much stress

and pressure as their intelligence, skill, and overall capabilities are judged by how high or how low these numbers are. In today's standards, higher grades are automatically linked to success and achievement while lower grades equate to limited opportunities or failure. With this scenario, student engagement becomes a major challenge. Students just go to school for the sake of studying in order to get a diploma or degree. The true essence of education and learning becomes lost and forgotten, leading to pressing issues such as increasing achievement gap and decline passion for learning among students' motivation and with the world's digital transformation, students experience wide exposure on the latest technological advancements in the form of gadgets, online applications, software, and games. In fact, students are able to spend long hours surfing the internet even playing online or mobile games with sustained levels of interest and engagement without getting tired. Based on a survey in 2015, due to internet accessibility and availability of portable devices, the use of mobile phones with its shift from computer usage has increased to 90 % of internet surfing, in which 51% of that constitutes to playing mobile games online (Chen et al., 2018). Comparing this to the context of educational perspective, the positive response students show on playing online or mobile games alone is at extreme ends with the response they show towards studying and learning.

This is because the extent of technology availability and usage among students influence their perceptions of valued activities in school (Miller, 2009). Students seek for more excitement and challenges in learning that goes way beyond class lectures, pen-paper schoolwork, and standardized tests. This alarming response became pivotal and essential as an eye opener to many educators to think outside the box and explore other strategies to sustain student engagement and interest for learning,

These issues on student engagement and achievement gave birth to a rising trend of incorporating game elements, rules, mechanics, theme, and aesthetics on non-game areas to make lessons more interesting and fun for students (Alsawaier, 2018). This innovation is called gamification in education. Its aim centers in channeling positive student responses from games to the education setting while experiencing the same feeling of excitement they get from playing actual online games. Gamification has been gaining a lot of attention and is not anymore considered new in the field of marketing and application usage. However, it is a fairly new concept applied in the aspect of education and only few studies have focused on investigating the effectiveness of gamification models and its impact on student outcomes (Shpakova, Dörfler, and McBryed, 2017).

One of the largest benefits of gamification in the classroom is its ability to engage students more effectively than traditional coursework. Turning a simple test/quiz into a fun activity, boosts engagement, cooperation, etc. opening doors to evolve every traditional approach in the current educational system and converting them into a more dynamic & flexible one.

Although, the primary goal and potential of educational gamification is to foster a learning environment that increases student engagement, motivation, discipline, and collaboration, it still gives hope to a brighter solution to solve current problems in education (Dichev and Dicheva, 2017). However, as no school system is the same, the gamification system to be applied must also be unique and designed to cater the needs of the school and customized according to the goal of providing solutions to fix probing issues that hinder development

When proper mapping and alignment of problems and solutions are established, only then can we discover results and look forward to how gamification might impact education and

student outcomes. With the need and search for effective innovations to help bridge gaps on student achievement, gamification is slowly building its foundation in the field of education, to provide possible solutions and strategies to solve problems related to student engagement, motivation, collaboration, and holistic development.

Gamification methods aim for promising outcomes of sustaining interest by fueling the students' hunger for knowledge and triggering students' curiosity for learning. However, due to existing policies applied by schools to adhere to certain global standards set by the ministry of education, implementation of these policies in conjunction to the school's adapted curriculum become monotonous in nature and tend to be the root cause of student disengagement.

### **Research Questions**

1. What is the pre-test and post-test scores of Grade-5 students at SRIC in their English subjects using Gamification?
2. What is the comparison of the pre-test and post test scores before and after using gamification?
3. What is the level of satisfaction of grade 5 students at SRIC after using gamification model in their English subject?

### **Research Objectives**

- 1) To study the pre-test and post-test scores of Grade-5 students at SRIC in their English subjects using Gamification.
2. To compare the pre-test and post test scores of Grade-5 students at SRIC in their English subjects using Gamification.

3. To study the level of satisfaction of grade 5 students at SRIC. After using gamification model in their English subject.

### **Research Hypothesis**

There is a significant difference in the pre-test and post test scores of Grade 5 students at SRIC in their English subjects using gamification.

### **Scope of Research**

The target group of this research is 15 students of Grade-5 students' academic year 2021 second semester who are studying at St. Robert's International College (SRIC) in Bangkok, Thailand. The length of time to experiment with the game learning model in the second semester of the academic year 2021. The duration was 6 weeks, 4 lessons, 50 minutes each, including the time to take the pre-test and post-test, and satisfaction survey.

### **Definition of Terms**

**Gamification.** Applying game principles, dynamics, mechanics or rules in non-game aspects in the field of education.

**Gamified school.** A school that adapts gamification in their overall system processes including areas like implementation of school policies, classroom management and discipline, teaching instruction and paradigm, formative assessments, and many others.

**Student achievement.** Student outcomes in terms of grades and test results as one of the considered factors that leads to success.

**Students' satisfaction.** This pertains to the level of student's satisfaction on the implementation of gamification in the classroom measure via adopted questionnaire with attributes on learning objectives, assessment, learning resources and materials and interaction.

### **Expected Benefits**

The positive acceptance of this study along with effective implementation, lead to the benefit of the followings:

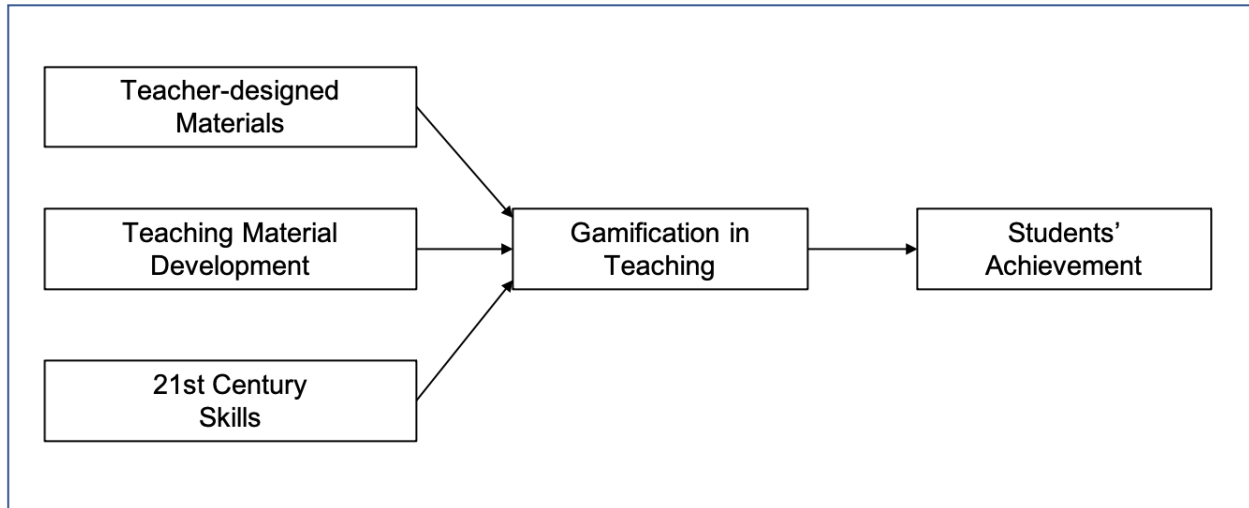
**Students.** Gamification is not just a new discovery that embodies game mechanics but it is more of an innovation that offers a whole new experience for students.

**Teachers.** Gamification can give aid to teachers for varied approaches in teaching processes and assessing students learning. With the games and activities tailored to experience fun in learning, teachers were able to plan more exciting lessons to sustain student attention and interest.

**School.** Gamification can help schools to come up with holistic innovation on the assessment regime through gamification implementation covering numerous concerns and issues not only encountered in the classroom but in the overall school system as well.

**Future researchers and innovators.** The promising outcomes of gamification inspired future researchers to explore deeper on guidelines of effective system implementation. The findings of this study provided more perceptions to researchers on where to start with their study and to review vague areas regarding the system and to search for answers to many questions and controversies underlying the concept of gamification.

## Conceptual Framework



**Figure 1.1** Conceptual Framework



## **CHAPTER 2**

### **REVIEW OF RELATED LITERATURE**

This chapter reviews literature in order to establish what is known within the field. It is divided into three main parts as follows:

#### **Part 1 Gamification Process and Design**

#### **Part 2 Perceptions about Gamification**

#### **Part 3 Synthesis of Related Literature and Studies**

##### **- Satisfaction Survey**

##### **- Pre-test and Post-test Comparison**

#### **Part 1 Gamification Process and Design**

A gamification structure in education lies beyond simply applying mechanics and dynamics into activities or lessons. Numerous areas need to be taken into consideration when it comes to designing gamification, most especially if our goal is to make its implementation a success. According to Kim (2015), the right way to design gamification follows a certain structure and steps in order to make it effective. The first step of the process is to have a clear goal. What is the purpose of gamification and its priorities in terms of the outcome we want to achieve? This is the question that must be asked first. Being able to layout the goals will make the design process and plan for evaluation easier. The target users must also be identified including their characteristics and attributes. The primary players of gamification are the users so it is very important to have their characteristics and attributes be considered. According to Bartle Player Taxonomy established by Richard Bartle, there are four types of players in a game structure based



on the different types of motivations of players (Söbke, Bröker, and Kornadt, 2013). The players whose main goals are centered on points and levels are called achievers. The players who figure out how things work and are focused on the interesting features of the game are called explorers. The players who favor interaction with people and are interested in inter-player set-ups are called socializers. And those players who create chaos and engagement. In addition, gender, age, culture, and academic performance of target groups including learning styles of students are areas needed to be explored and considered in designing a gamification framework as these attributes affect different game usage patterns. The main goal is not to rely solely on extrinsic factors like rewards for the system to work. It is about making the system meaningful in the intrinsic aspect, creating more intrinsically motivated users that will continue to be motivated in going back and doing what they are meant to accomplish. It is also important to investigate the role of gamification in the pedagogical aspect of education, considering it as a tool to aid teaching learning content and not just engaging students. Structuring game mechanics and dynamics might become a challenge having to consider games to match or align with learning goals. Games to be applied must be suitable to the learning content and different knowledge types namely declarative, conceptual, rules-based, procedural, affective knowledge, soft skills, and psychomotor domain. It's effectiveness in terms of meeting learning goals is an area that needs further research as this is a less explored facet in gamification. When gamified constructs are used appropriately with its dynamics matched to how learning content is carried out, gamification becomes more effective. The danger of gamification lies on the idea that students will only engage in activities or tasks if they are given rewards for their work. Relying too much on the concept of rewards in order to get

things done makes gamification harmful to the goals that educators aim to fulfill, the success of students in terms of student achievement. Instead of focusing on extrinsic rewards, gamification must focus on the factors to increase students' intrinsic motivation such as giving verbal rewards instead of tangible ones, strengthening competence affirming aspect, and granting users the autonomy in setting their own goals and making choices for their learning. With a gamification design in place for implementation, its impact on students has to be constantly monitored and its success has to be measured in order to open door for improvement.

An educational role-playing game called ClassCraft designed and created by Shawn Young and Devin Young has completely changed classroom dynamics by providing a platform where teachers can think of innovative ways to connect students and help them make learning environment more engaging (McCully, 2014). ClassCraft turns classroom management into whole new level by encouraging positive behavior and outcomes through gamification. Its primary goal is to make the entire classroom into a game and make experiences more fun and meaningful for students (Lambie, 2017). Students participate in missions or quest where they work in teams. Each team has one warrior, one healer, and a mage, each play specific roles to surpass challenges and survive in the game. Teachers are allowed to set their own parameters in terms of points, rewards, and how the game is going to progress. Teachers can then reward points and students can benefit individually or as a team. In addition, students can also customize their own avatars with the available predefined characters with preset powers. Loss of experience points is also possible whenever a bad behavior takes place. At the same time, parents can also be actively involved in the gamification process by being able to check their child's progress and status in the game and

also being given the authority to award points. ClassCraft is centered on behaviorism and earning rewards after doing certain tasks. In addition, teachers' roles are not only limited to being a teacher but also as the game masters. Teachers must be familiar with the game elements and must enjoy these elements as well as applying them in order to ensure successful implementation of the system. On the dark side, ClassCraft is embedded with weapons and powers which may become harmful especially that scenarios are role plays being experienced by the students

In a critique by Bretherton, Sim, and Read (2016) on the behavior management system, ClassCraft, as adopted by primary schools in UK, certain barriers and challenges to its implementation were emphasized. First, since the system needs technology usage, access to technology is one of the main concerns. But since technology in UK at present is widely accessible, this poses a minor concern on that aspect. However, with teachers and staff who are the main users of the system have to be well trained and be exposed to professional developments in technology usage and proper implementation of the system in order to avoid problems. This is very helpful as technology advancement happens in a fast pace and the users must be constantly updated with these changes in order not to be left behind. The perspectives of teachers, students, and parents are also some factors that need to be considered before the implementation as they are the direct people involved in the system. In the teachers' aspect, time becomes the main concern in using Class Craft. The system requires the teachers to allocate time to set rewards, consequences, and scenarios within the game. On top of that, teachers need to keenly monitor these assignments and how students respond to assigned tasks, making sure that standards are met. There are also cases where

instant recording of giving points is not possible as doing so needs time. This leads to inputting points at a later time which then requires extra time for the teacher to accomplish. Familiarization of the game is also crucial and motivation to apply the system in the class setting matters. The implementation starts with the teacher so if the teacher is not motivated to use the system then the students will not have a full gamified experience. Another concern among teachers is also the idea that reward systems may only motivate students because of the rewards they will get. The question goes to whether students have actually increased their learning or not. The same goes with the students. In order for the implementation to be successful, students should be motivated and engaged by it first. Students have different learning preferences. Some may be interested about the game concept and the role play factor of ClassCraft but some might not be interested in participating in this type of approach. The game itself allows the teachers to exclude those uninterested students and just apply the game to those interested ones.

This causes a hassle on the teachers' part as two different systems need to be used, one for the interested students and another one for those uninterested ones. For the participating students, individual points were the main focus over team points. With that, expectations from the team members for a student to perform well might also cause peer pressure. On the involvement of parents, game familiarization and inclination to the use of technology were included in among the issues they faced. Time in balancing their responsibilities in following up their children and fulfilling their roles as parents was also challenged by the role to constantly monitor their child's status and giving reward points in ClassCraft. Parents also continued to have issues on their

children being exposed to games, rewards, and technology use, that these may be factors that could contribute a negative impact rather than the aim of a positive impact on student learning.

The game might have excellent features that encourages motivation and engagement among student but its sustainability in the long-term setting has yet to be studied. Barriers presented including the children's age range has to be taken into consideration in order to become successful in the implementation. Training and support among teachers and staff have to be increased in order to increase engagement and at the same time carefully manage both positive and negative feedback among students.

## **Part 2 Perceptions about Gamification**

Games are played by all ages of life. In the present, because of the rise of the internet and digital advancements, games have also shifted its way into the virtual world. Students spend a lot of time playing games so combining gamification and education make a perfect tandem. As gamification tends to increase the students' attention span and motivation to learn, it then leads to affect student achievement positively. In the process, a course itself becomes a game. When a student completes the game, the student completes the course as well. Simply incorporating games in the teaching-learning process doesn't qualify as gamification. It has to be structured with dynamics, mechanics, and components in order for it to be effective. However, even if gamification settings theoretically create a positive impact on student achievement, it still the perception of the students that will determine its effectiveness in the practical setting. A study conducted by Yildirim (2017) was based on the Q-methodology implementation, a combined qualitative and quantitative approach focusing on the students' perspective, attitudes, and ideas, examining gamification. The

focus was to find a common ground between the dimensions and the ideas of the students. Based on the findings, it was established that students' acceptance on gamification belongs to a common ground and that gamification has a positive effect on gamification. In addition, Yildirim (2017) also asserts that dynamics which consists of logic of process, emotion, and advancement structure, along with mechanics which consists of competition and cooperation are the most important aspects of gamification process. Components such as achievement points, badges, experience points are only secondary as they are elements that are only visible in the surface. A well-structured game dynamics and mechanics should be given more importance because they are the elements that make a gamification approach engaging.

Gamification triggers motivational responses through rewards and competition. These are characteristics that are traditionally associated with games. In the study conducted by Buckley, Doyle, and Doyle (2017), three aspects were considered namely assessing students' perceptions on gamification as a pedagogical technique, providing insights to educators on how to integrate gamification in the curricula, and lastly, identifying weak areas of gamification and how these issues may be addressed before regarding gamification as a matured pedagogy. Moreover, understanding students' perceptions about gamification is a good way to start the process as students are the primary targets of gamification. It will also provide a tamework that may lead to successful implementation. In this study, two different sets of respondents participated. The first group were third year undergraduate students while the other is a small group of a full-time graduate students specializing in taxation. A gamified learning activity patterned from the concept of prediction market was implemented, also simulating real life application of the concept. At the

end of the term, the participants were invited to join two focus groups for the qualitative data collection. In the findings of the study, the undergraduate group of respondents found the implementation significant in terms of the pedagogical aspect because of being able to experience how the real world operates. They claimed that they also acquired a wider understanding about taxation and enhanced their knowledge about the subject matter, thus, seeing the positive influence of the activity. In terms of motivation, the undergraduate students also stated their motivation level was influenced by the ranking level. Their motivation increased and driven by the activity's competitive element. Another aspect that caused motivation is the part where they felt and experienced the success of being able to beat the system of taxation. They were able to formulate strategies and apply manipulation techniques in order to earn rewards. The concept of gaining financial rewards were also motivating for the students as they find it novel to earn rewards in this manner as compared to getting good grades. On the other hand, the group of graduate students didn't perceive the implementation to be of great impact, highlighting that they don't see its relevance to future tax professionals but more on career trading. The respondents were only able to see the relevance when the moderator pointed out the purpose of the activity. In addition, the graduate students didn't enjoy the idea of having a sense competition. They simply weren't inclined towards the concept. Although they agreed on the novelty approach of the project, adjusting due to the demand of shifting from one learning modality to another in a tight schedule made them feel frustrated. They preferred the traditional approach in this aspect. In the study, it was also prevailed that gender is also considered as one factor that affects motivation. Male respondents were more

inclined to competition as they are naturally more competitive than females. However, this area is subject to further research in order to learn more about the competitive nature of males and females.

Some challenges were also emphasized for future implementations that the project might not be suitable for conventional and traditionally bookish learners. Issues on class sizes were also pointed out. A larger class size might be more appropriate to ensure a healthy competition as compared to a smaller class due to the fact that students in smaller classes exhibit a closer relationship with one another. This becomes a limitation, making competition uncomfortable. The novelty of the project is one factor that attracts the interest and motivation of students. Although gamification has shown great potential in improving pedagogical constructs, further research is needed in order to draw out more definitive conclusions. Investigating areas such as class size, education level, and student perceptions is crucial in regarding gamification as an effective learning intervention in education. Despite the rapid increase of research undertaken in the area of gamification materials explaining the proper implementation of gamified learning activities are lacking. In the context of education where engagement of students is concerned, identifying the concrete game elements and its proper implementation are important. Cheong, Filippou, and Cheong (2014) conducted a study and investigated student perceptions of game elements. In this study, IT undergraduate students were selected as respondents. With this profile, the participants are naturally inclined, interested, and well-experienced in playing games. The respondents participated in a survey that focused on students' perception in terms of expectations of gamification in learning and the usefulness of game elements in its quantitative and qualitative aspects. Under expectations of gamification in learning, the survey findings denoted that majority



of the students are previously not familiar with the term gamification. After they were given an overview about the concept, students were able to understand more. Majority responded that they are excited of the idea of gamification and are comfortable to use it, suggesting positive expectations on gamification. The rest responded that they are reluctant and anxious of the implementation. This may be due to their less familiarity of the concept. Based on students' comments, the implementation of gamification may make classes more interesting and result to increased attendance in class and improved motivation and engagement among students. In terms of the usefulness of game elements in the quantitative aspect, the respondents overall believed that all game elements namely, points, leader boards, profile, teams, progress, bars, and badges are useful and key factors to make gamification enjoyable having progress bars with the highest rating of usefulness. Preferences in the context of gamification were also determined based on the students considered to be regular players and those who are non-regular players. Regular players found teams, progress bars, and profiles to be the most preferred game elements while non-players preferred progress bars, teams, and points. The study emphasized that both groups have no statistically significant preferences. This clearly implies that therefore, it doesn't matter which of the game elements were used. In terms of the usefulness of game elements in the qualitative aspect, respondents commented that a point system makes a gamified setting interesting because it allows students to keep track of their own progress. Having a point system also fosters competition and allows one to have actual proof of being able to improve on knowledge and skills. The point system is then reflected to the leader board where the students can also see how good they are compared to other students. However, leader board and ranking are not the basis for determining the depth or

extent of students' acquired knowledge. Those participants who are not performing well in terms of leader board ranking may not enjoy this particular game element. In addition, students may also feel a push towards self-improvement and become more motivated in the process. Player profile also indicates a similar perception with leader board. Their profile allows them to keep track of their individual progress and status. Students also enjoy working in teams. As social beings, to belong in a team allows them to socialize with others and exercise integral life skills such as communication and collaboration. Students perceive progress bars to be interesting and motivating. It denotes completion of a certain task or level and the graphical characteristics makes the presentation more understandable and engaging. Achievement badges also drives motivation among the respondent, this time not in the aspect of task completion but in mastery of tasks.

The students' perception on how their motivation and engagement increased in a gamification driven environment is also backed up by teachers. Teachers embedding gamification in their teaching instruction also expressed their positive views on the effects of gamification not only on student motivation and engagement but also on their own motivation and engagement levels in teaching and managing students. gamification has been applied in schools even in the past but teachers are just not aware that the method they are using is already a form of gamification. Giving points, leader boards, badges, and rewards have long been practiced in education but has not really been highlighted yet in the pedagogical aspect. At present, school and teachers have slowly embraced the concept of using gamification as a tool to aid teaching instruction and are hopeful of the effects that gamification may bring and contribute towards the improvement of student outcomes. As gamification implementation is further explored in the high school level, a

study by McFarland (2017) explored the different perceptions of 10 to 15 teachers representing several public high schools in California who applied gamification to aid their teaching instruction and classroom management. Each teacher had their own gamification framework and style of making use of gamification elements to make the method work for students. Most teachers find it effective to make use of themes to incorporate in their gamification framework, stating that themes were convincing for students to engage and participate more. Some also used educational simulations where the gamified environment is structured based on real life situations. Engaging students in such environments allowed them to further develop their 21st century skills and have seen the connection of lessons learned in the classroom to the real world. Through these simulations, teachers were also able to bring back the fun in learning. Even with different styles of gamification frameworks applied by every teacher, results meet to one common outcome and that is producing dramatic effects in student motivation and engagement.

**Table 1.1** The differences between Game, Game-based Learning and Gamification

	<b>Game</b>	<b>Game-based Learning</b>	<b>Gamification</b>
<b>Objectives</b>	For entertainment, fun or not for learning purposes.	For learning	Encourage students to participate in learning. It may only be used for accumulating points or rewards.
<b>Winner/ Losers</b>	Winners or losers are part of the game.	There may or may not be winners or losers, because the purpose is to learn through games.	There may or may not be winners or losers, because the purpose is to encourage students to participate in activities.
<b>Play</b>	Playing for entertainment comes first. The reward may or may not be available.	Play will be played through learning activities. The reward may or may not be available.	Playing is not focused, but focus on participation by giving the reward.

	<b>Game</b>	<b>Game-based Learning</b>	<b>Gamification</b>
<b>Game creation</b>	Creating a game is difficult and complicated. Game designers and developers are required.	If there is a game, it will be difficult and complicated to create. if it is an activity, it must be well designed with clear rules and regulations.	Easy to create as there is no game, just use the game mechanics through the gamification elements.
<b>Price</b>	The price is high because it requires a lot of people to create the game.	Moderate price, because the people to create games and activities are small and uncomplicated.	The price is low because using a small group of people, but focus on the cost of reward which costs less compared with Game and Game-based learning.

Source: Kritsanapong Lertbumrungchai (2017)

### Part 3 Synthesis of Related Literature and Studies

Since the rise of modern technology, motivation and engagement levels among students continue to decline, prompting the need of finding better and possible solutions to stop and fix this problem. These decreasing levels of student motivation and engagement became major problems faced in the field of education as both are directly linked to student achievement. Even with emerging trends in education and its adaptation to technology integration, the aim of improving student achievement is sometimes overpowered by the distractions caused by technology, with students being able to spend long hours of surfing online, being active in social media, and playing online games. The attention span of students when it comes to these activities are just surprisingly long, allowing them to become engaged and motivated without feeling tired at all. This type of behavior and response has fueled the interest and curiosity of researchers and educators on the possibility of converting students' attitude towards games into increased engagement and motivation towards studies and learning.

Games, play, and learning by doing are all part of the strategies used in your learners. Kids are naturally inclined to games and play but as students grow older and reach to a higher level, the presence of these elements slowly decrease. There are no evidences that older children dislike games and play. Both are just naturally taken out of the picture as students head towards a more mature and serious type of learning environment. This lead to studies testing the effects of incorporating games back to the picture and how it can affect student learning.

The use of game elements along with narratives, simulations, dynamics, and mechanics opened doors to another trend called gamification. The concept of gamification is still new as it just started gaining popularity in the last decade. With its rising popularity and known effects to contexts outside education, educators looked into gamification as a paradigm shift in education and applying it particularly in teaching instruction and learning management platforms. The first step is to design a gamification system that addresses the needs of both students and teachers and focuses on targeting the gaps of learning caused by the lack of motivation and engagement of learners. Game-based learning, educational games, and online learning are often confused with gamification. It is important to note that a certain methodology can only be considered gamification with the presence of game elements, dynamics, and mechanics incorporated in non-game contexts. Moreover, gamification allows learners to connect and engage in school through individual and collaborative set-ups, making way for experiential learning to take place.

Gamification has its positive and negative attributes in terms of the perceptions of students and teachers. Based on preview studies, the positive aspects that can be highlighted in

gamification are the feeling of excitement and increased interest and providing opportunities for collaboration and mastery assessment. Learners become excited of learning, are able to connect with others, share ideas, and work together in collaborative environments in order to accomplish tasks and reach a common goal. In addition, gamification learning platforms also allow learners to master concepts through repeated trials until the correct answer is reached. Students who fail are not condemned because of making mistakes, instead, those mistakes and failures are considered learning opportunities that lead to mastery. On the other hand, negative perceptions also emerged and that gamification processes become means of forcing learners to complete tasks in order to get past one's current level and to increase points earned. This leads to self-validation and self-esteem issues as affected by the rise or fall of one's leaderboard ranking. Equity and fairness are also important areas that need to be addressed in order to maintain student interest and engagement.

### **Satisfaction Survey**

Satisfaction survey on the participants or respondents of a research is a common indicator of a successful intervention. It is commonly applied to measure whether participants have no burden during the intervention. For example, Somdee and Suppasetserree (2013) researched on *Developing English Speaking Skills of Thai Undergraduate Students by Digital Storytelling through Websites*. The purposes were to investigate the implementation of digital storytelling and the satisfaction toward learning from digital website. The sample group were 50 Thai undergraduate students enrolled the English compulsory course at Suranaree University of Technology. Apart from the evaluation of efficiency used the formula 80/80 criteria, satisfaction survey was one main indicators of course efficiency. Similarly, Intakaew (2014) studied on the

efficiency of a teacher-design textbook on English for airline ground attendant service. The purposes aimed to create ESP materials for future airline ground attendant, determine the efficiency by using 80/80 criteria, and measure students' satisfaction toward the materials. The results demonstrated that the materials were efficient and most students rated at very satisfied level.

### **Pre-test and Post-test Comparison**

Pre-test and Posttest comparison is one of the most accepted data for further statistical treatment in order to determine the efficiency of a certain intervention. Adoniou (2013) studied on *Drawing to support writing development in English language learners*. Drawing was used as effective tool to develop English writing skill of the children from a Year 3/4 class in a government Introductory English Centre situated in a primary school in Australia. The results demonstrated that drawing before writing improved the informational text type writing and writing procedures and explanations which all based from pretest and post test comparison. In the same manner, Marriott and Torres (2016) found the result of the research *Concept Maps and Language Acquisition: An Implementation with English Language Level 2 Students* that the concept maps were able to be as facilitators of language learning with comprehension, and the thinking skill which in turn measured using pretest and posttest and run for t-test.

## CHAPTER 3

### RESEARCH METHODOLOGY

#### Research Design

This study applied one-group pre-test and post-test design to quantitatively analyze the effects of the implementation of gamification on the satisfaction and student academic achievement. The study was compared the students' performance before and after the exposure to the implementation of the gamification. Validity and reliability tested self-constructed questionnaires were administered to evaluate the students' satisfaction. Gathered data under these dimensions were statistically analyzed together with the academic achievements of the student in the experimental group.

**Table 3.1** Research Design

Pre-test	Experiment	Post test
T1	X	T2

- T1 is a pre-test
- X is a teaching using gamification
- T2 is a post test

#### Target Group

The target group was 15 Grade 5 elementary students of St. Robert's International College in the second semester of the academic year 2021.



## **Duration**

The length of time to experiment with the game learning model in the second semester of the academic year 2021. The duration was 6 weeks, 4 lessons, 50 minutes each, including the time to take the pre-posttest and satisfaction survey.

## **Research Instrument**

The instruments used in the research were divided into two categories. The instruments for the experiments and the instruments for collecting information.

### *Research Instrument 1:*

The self-constructed was designed and based on Concept-based Instruction and the core curriculum. They were provided for English productive skills and conceptual thinking skills matched with grade 5 students. Three experts validated the lesson plans to evaluate IOC. They were 0.67-1.00, higher than 0.50 that were usable. The researcher edited some items suggested by the experts before using the lesson plans.

There were four units; the topics for each were:

*Unit 1, Simple Tense:* this unit contains how to introduce oneself with some information; for example, name, nationality, age, likes or dislikes and etc. Furthermore, the information about family is required for this unit. It is as same as the beginning point to access the language started with oneself and then wider society.

*Unit 2, Forming Past and Past Participle:* this unit is about how to tell the story which already happened in the past. The language aspect will be surely related to past tenses. By the way,

more contextualized content is provided for this unit because of the students' own experience and the others' such as the best day of my life, my embarrassing experience, and so on.

*Unit 3, Present Perfect Tense:* this unit is related to how to wear an appropriate garment with the season or weather. Some vocabulary about clothes is needed in this unit. Basically, the unit provides the language in use regarding to culture and appropriateness e.g. wearing a tank top in Summer.

*Unit 4 Past Perfect Tense:* this unit combines with what the global environment is, types of energy, problems, causes and the ways to solve the problems of global environment. The student can understand the importance of surroundings and the conservation.

According to Jolly and Bolitho (1998), there are some stages of creating teaching materials and also adapting teaching materials, they were applied to use for a learning package construction and development. Those were:

1. *Identification of need for learning package.* This stage aimed to find some topics and problems in using English for communication especially the productive skills. For examples, the topics should be something about the students themselves or something around themselves which is important or normally wrong. The topics were found in the Basic Education Core Curriculum A.D. 2008.

2. *Exploration of need or language.* The teacher or the teaching-material developer did research on how each situation is and some ways to use the language properly, and the needs of conceptual thinking which can be solved by Concept-based Instruction.

3. *Contextual realization of learning package.* The teacher searched for the texts related to the topic which can be found in corpus.

4. *Pedagogical realization of learning package.* The teacher planned and designed to choose the most appropriate material for each activity; it was possible to be worksheets or drills. By the way, the material was based on the productive skills, and related to conceptual thinking skill.

5. *Production of learning package.* The teacher created the learning package of Concept-based Instruction by the appropriate software. The teacher was concerned about duration and reasonability. Before using the materials, the teacher revised and edited. Student use of the learning package. The teacher piloted the learning package and collected the data to see some advantages and disadvantages.

6. *Evaluation of the learning package against agreed objectives.* This stage was to analyze those advantages and disadvantages, and develop them for the next instruction.

The self-constructed learning package was examined by experts in the field of curriculum and instruction in terms of its appropriateness to the target group. Furthermore, pilot study was conducted to selected participants (not being a part of the actual sample) to check whether the content and instructions stated in the learning package was understandable and clear.

#### *Research Instrument 2:*

The Pretest and Posttest. A pretest was before teaching using gamification in studying English. The pre-test was used to obtain students' achievement score before as a benchmark

comparison point for the posttest and the effects of the intervention. The pre-test consists of multiple-choice items. The researcher uses multiple choice because the said exam items construction is one of the widely accepted methods of testing reading comprehension. Moreover, it is easy to administer and can be graded quickly with extensive accuracy and acceptability. The pre-test comprises a literal comprehension test and an inferential comprehension test. The pre-test and post-test were the same test items but the posttest items were reshuffled in order to avoid answer memorization and items familiarization of the participants. The pre-test and post-test were from test generated items from the book *Open Mind* by Mickey Rogers, Joanne Taylore-Knowles and Steve Taylore-Knowles. Hence, the reliability and validity of the said test were no longer conducted because the test was a commercial test and the reliability was tested using KR-20 formula of Kuder and Richardson. Reliability Statistics was 0.802.

*Research Instrument 3:*

The student satisfaction survey. The participants were asked to rate the level or score towards using gamification in studying English which contains teaching and the learning package. There were twenty (20) items which concluded with positive items. The questionnaire was adopted in Aman, R. R. (2009) from a dissertation entitled: *Improving Student Satisfaction and Retention with Online Instruction Through Systematic Faculty Peer Review of Courses*.

## Data Collection Procedures

The data collection procedures were divided into three phases: pre-instruction, while-instruction, and post-instruction.

Phase 1 Pre-instruction: the orientation part which was to break the student's wall by using ice breaking activities. Then, gave the instructions about research aims. The sample group took the pre-test.

Phase 2 While-instruction: during the instructional phase, the sample group learned with the gamification.

Phase 3 Post-instruction: at the end of the course, the sample group took the post-test and also the questionnaire.

The duration of data collection took 4 periods of the second semester of the academic year 2021. The table below indicates the process of the experiment in brief:

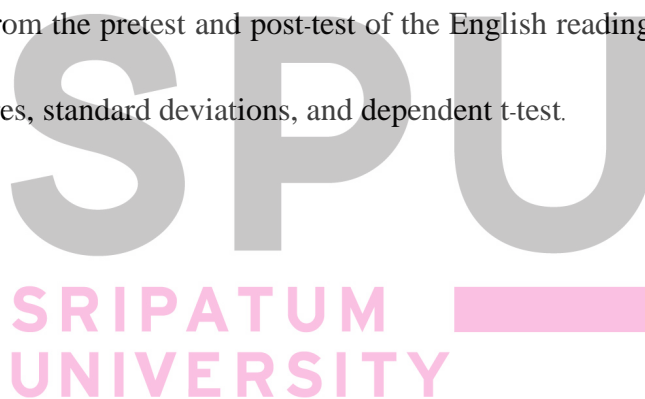
**Table 3.2** The Application of the Gamification in English Subject

Periods	Contents
Phase: Pre-instruction	
1	Orientation Pre-test
Phase 2: While-instruction	
2	Unit 1: <i>Simple Tense</i>
3	Unit 2: <i>Forming Past and Past Participle.</i>

Periods	Contents
4	Unit 3: <i>Present Perfect Tense</i> :
5	Unit 4: <i>Past Perfect Tense</i>
Phase 3: Post-instruction	
6	Sample group took the post-test and answer the questions in the questionnaire.

### Data Analysis

The data from the pretest and post-test of the English reading comprehension will be analyzed by mean scores, standard deviations, and dependent t-test.



## CHAPTER 4

### RESULTS

In this chapter, the results of study are presented according to the order of research objectives stated in Chapter One. More specifically, this chapter presents the results into three main topics. The first one is the result about students' achievement score, followed by comparison of the pre-test and post test score and the last one is about students' satisfaction level. The results of the analysis were presented as follows:

**The first objective was:**

**To study the pre-test and post-test scores of Grade-5 students at SRIC in their English subjects using Gamification.**

**Table 4.1** *The students' score on the pretest and posttest.*

N	Test Scores	
	Pretest	Posttest
1	7.5	8.75
2	6.75	8.5
3	5.75	7.75
4	6.25	8.25
5	7.25	9.25
6	7.25	8.5
7	5.75	9.5
8	5.75	8
9	5.25	8.75
10	8	8.75
11	6.5	8.75
12	6.75	8.5
13	6.6	9.25

N	Test Scores	
	Pretest	Posttest
14	6.75	9.25
15	7.5	8.75
Average	6.64	8.7

**Table 4.2** *The descriptive statistics of the students' score on the pretest and posttest.*

	Mean	N	SD	Std. Error Mean
<b>Pretest Score (40 items = .25 points each item)</b>	6.64	15	2.158	0.499
<b>Posttest Score (40 items = .25 points each item)</b>	8.70	15	1.3803	0.502

Table 4.3 shows the result of mean, standard deviation, percentage and t-test of students' pre-test and post test scores on the implementation of gamification in an English class. In the post test of 15 grade 5 students who are taught by using gamification model, the students had an average mean score of 8.70, with a S.D. of 1.38 or 87%, which was higher than the average mean score of the pre-test, the students had an average mean score of 6.65 with a S.D. of 2.16 or 66.5%.

Similar to the findings of Richavee Chatviriyawong (2017). It was discovered that when students were treated with gamification improved reading skills. Similarly, Klingner and Vaughn (2000), is a set of instructional practices meant to help students of various abilities acquire and practice comprehension strategies for use with informational literature. Gamification aims to promote reading comprehension and conceptual learning in ways that optimize students'



participation by gaming and encouraging students' ability to employ comprehension methods while cooperating.

**The second objective was:**

**To compare the pre-test and post-test scores before and after using gamification.**

**Table 4.3** t-test results on students' score on the pretest and posttest.

	<b>Pre-test</b>	<b>Post-test</b>
<b>M</b>	6.64	8.70
<b>S.D.</b>	2.158825217	1.380312703
<b>%</b>	66.5	87.0
<b>t-test</b>	*0.001127	

\*Significant at the .05 level

The results revealed that the students acquired better post test scores after using Task-Based Learning and Collaborative Strategic reading, at a statistically significant 0.001. This revealed that the mean of the post-test scores received a significantly higher score than the pre-test. The comparison of pre-test and post-test were statistically significant statistically significant at 0.001 with the level of ( $p < 0.05$ ), thereby accepting the Research Hypothesis No.1 that there is a significant difference in the pre-test and post-test score.

The result of this study can be equated into the origination of the program proposed by Skrtic (2005). He suggested that an gamification designed to develop knowledge and understanding

about students with alignment with the lesson would be beneficial for students. Gamification programs are beneficial for students on the typical assessment regime as well as for teachers working with them.

**The third objective was:**

**To study level of satisfaction of grade 5 students at SRIC after using gamification model in their English subject.**

**Table 4.4** Average Satisfaction Survey Result in using Gamification

Student	Mean	Level of Satisfaction
1	5.00	Very satisfied
2	5.00	Very satisfied
3	4.00	Satisfied
4	5.00	Very satisfied
5	5.00	Very satisfied
6	5.00	Very satisfied
7	4.00	Satisfied
8	5.00	Very satisfied
9	5.00	Very satisfied
10	5.00	Very satisfied
11	5.00	Very satisfied
12	5.00	Very satisfied
13	5.00	Very satisfied
14	5.00	Very satisfied
15	5.00	Very satisfied
<b>Total Mean</b>	<b>4.87</b>	<b>Very satisfied</b>

**Table 4.5** Average satisfaction level using Gamification

<b>The average score of all students' satisfaction level</b>	<b>Satisfaction levels</b>
4.8	Very satisfied

In this study, the mean of students' satisfaction towards learning with Gamification at the primary school level was interpreted by using criteria as the following information based on the proposed description of Intakhaew (2014).

<b>Point Scale</b>	<b>Mean Range</b>	<b>Description</b>	<b>Interpretation</b>
5	4.50- 5.00	Very Satisfied (VS)	Students are very satisfied towards learning with Gamification.
4	3.50- 4.49	Satisfied (S)	Students are satisfied towards learning with Gamification.
3	2.50- 3.49	Neutral (N)	Students' opinions are neutral towards learning with Gamification.
2	1.50- 2.49	Satisfied (S)	Students are unsatisfied towards learning with Gamification.
1	1.00- 1.49	Unsatisfied (UN)	Students are very unsatisfied towards learning with Gamification.

Table 4.5 shows the result of the level of satisfaction and percentage of satisfaction after teaching English by using Gamification model with 15 grade 5 students while Table 8 shows the average satisfaction level of all participants. The results shows that there were 13 students or 90% had most satisfied level and 2 students or 10% had very satisfied level.

## CHAPTER 5

### CONCLUSION, DISCUSSIONS AND RECOMENDATIONS

This chapter presents the summary of findings, conclusions, and recommendations based on the results of the study.

#### Conclusions

Based on the foregoing findings, the following conclusions were drawn:

1. The use of gamification in teaching English to Thai learners was effective as demonstrated by the increase in post test score compared to the pretest scores of the student. Most of students were excited to learn using gamification. Regarding to their scores, they exactly showed considerable results which signifies their learning through exciting activities, the place to publish their writing and the stage to speak English. Buckley, Doyle, & Doyle (2017) further added that gamification provides teachers with a pedagogical technique on how to integrate gamification in carrying out curriculum. Hitchens and Tulloch (2018) also reported on the effect of gamification on attitude attributes of participants gaining more motivation and increasing engagement.

2. There is a significant difference on the pretest and posttest score of the students which signifies effectiveness of using gamification in a language classroom. The statistical result supported the claim of using Gamification to improve students' language ability. This is supported by most of the previous studies on gamification that system features, dynamics, and mechanics are important to make the system work. As backed up by Bretherton, Sim, & Read (2016) that game elements such as leaderboard, points, and badges are gamification features that stimulate the

curiosity and interest of student. In addition, these features also affect teachers' satisfaction in using the system especially with regards to managing their time while using the system. Marczewski (2015) also mention the importance of considering the types of players involved in the gamification environment in designing systems in order to cater to them

3. Students are motivated in using gamification and they considered it as learning while playing. Therefore, using gamification would not only improve students' English but also their motivation in learning the language. Both teachers and students showed high levels of satisfaction in the use of gamification system. The extent of use of gamification to aid the teachers in their formative assessments is on level of very high extent, establishing essential portion with student engagement which also is on the level of very high extent.

## Discussions

### On the pre-test and post-test scores of students in using Gamification

In teaching and learning English by using Gamification model for 15 grade 5 students, students had a posttest average mean score of 8.70, with a S.D. of 1.38 or 87% which is higher than the pre-test scores. This may be due to samples of this study are a child who are begin to learn the wider world, like excitement and satisfy with new things. They will learn things from the external environment, such as learning about friends, teachers and playing with friends. Freud: Psychoanalytic Theory, Latency stage as cited in Bussakorn Yotanak. 2012) Therefore, interactive learning in the gamification affects students' interest. This is because the gamification model using game mechanism which is different elements from regular learning. It helps students to have fun,

satisfaction and better understanding of the lesson. In the process of learning, teachers establish rules, conditions, and awards to give students an overview of the assessment and make them have more motivation to study to get the reward. In the management of learning by using gamification model, it will design a lesson plan that students can study on their own at their own pace. As a result, students can learn to their full potential. This is consistent with Bergmann and Sams (2012) as cited in Nakharin Suksai (2018) that students have unequal learning speeds. Students should be allowed to control their learning speed. This gives them an opportunity to review and implement activities. If there is any misunderstanding, they can go back and review or pause the learning for better understanding. As a result, students had higher English achievement scores after learning by using gamification model.

#### **On the comparison of pretest and post test scores of students in using Gamification**

These results imply that the learners performed tasks that strengthened their English skills. The students practiced reading skills through gamification learning process, which trained students to communicate within groups, regardless of grammatical grammar. Thus, in games, language allows learners with weak learning backgrounds to use simple sentences to communicate with peers in a group, and this results in greater confidence in using the language when learners share learning from internal topics. The group then gives the learners a deeper understanding of the subject, and every step of the learning process is complemented by the learning which helps the learner to succeed through the interaction between the teacher and the learner.

Another gamification benefit relates directly to the development of the students' communication skills or their language output, reading comprehension should not be viewed as a receptive skill students need to practice only by reading. Forcing output as Nadia Ben Amer (2020) mentioned, can help students to comprehend deeply what they are reading. the process of decoding the text. It's also involved expressing the students' thoughts by discussing with their peers to encourage deeper understanding and critical thinking. Communicative skill development from the use of task-based learning, therefore, the added benefit the students will also receive.

Similar to the above claim, Paisan Wangpanich (1983) mentioned that learning achievement is the characteristics and abilities of a person resulting from teaching and learning. It is a change in behavior and learning experience resulting from training or teaching, which will give a measure of achievement in examining the level of competence or the achievement of a person about how much they have learned and how capable.

Moreover, Pairoj Kachen (2013) as cited in Nongluck Kheawmanee (2019) mentioned that learning achievement is the characteristics, including the knowledge and abilities of a person as a obtained from learning or all experiences that person obtained from learning. These leads to behavioral changes in all aspects of the brain which aims to check the level of a person's brain to know what they have learned and how much are capable of. As well as the consequences of learning or experiences at school, at home and in other environments including feelings, values, ethics are also the result of practice.

***On the satisfaction level of student in using Gamification***

The Royal Institute Dictionary (1999) as cited in Prasert (2022) mentioned that satisfaction is love, like and satisfy. In a similar way, Karnchana Phasuraphan (1988) as cited in Jaruwan Devakul (2012) mentioned that satisfaction is person's feeling or level of feeling that meets or exceeds expectations. This concept of considering students satisfaction as one indicators of effective teaching was supported by Suthep Mek (1988) as cited in Jaruwan Devakul (2012). He mentioned that satisfaction in the learning atmosphere is the feeling of satisfaction in the condition of the elements related to teaching and learning which is important in helping students to have a lively learning, be exuberant and enthusiastic in order to learn for their own benefit. In a similar fashion, Charinee Dechchinda (1992) as cited in Kewalee Phangdee and Pimrada Khongyuth (2013) mentioned that satisfaction is person's thoughts or attitude towards something or related factors. Satisfaction occurs when a person's needs are met or achieved to a certain extent. This feeling will not happen if needs or goals are not met. Based on these, learning satisfaction refers to the perception of learning management that meets the goals or more than the setting goals. The satisfaction of learning will help to improve students' learning enthusiasm.

In teaching and learning English by using Gamification model for 15 grade 5 students, there are 18 students or 90% had most satisfied level and 2 students or 10% had very satisfied level. The average score of all students' satisfaction level is most satisfied level. This is because students like interesting learning and interesting activities. In using the learning of gamification model, students have to collect the point to help and get reward. Therefore, students like activities and want to carry out the mission continuously. Children at this age will have more curiosity and



interest to do things they haven't done before, pay more attention to long-term activities, focus more on work, work more carefully and listen to more suggestions. Be able to understand simple explanations, be interested in playing, drawing, reading comics, favorite stories and collecting things. (Bussakorn Yotanak. 2012) Using gamification model, the teacher has set the story and theme according to the content of the lesson with animation and videos to let students learn. Teachers instead of working are doing missions which encourages students to be more interested in doing and would like to know about the next mission. This learning design enables students to have most satisfied level with teaching and learning by using gamification model.

### **Recommendations**

In the light of the conclusions drawn from the study, the following are hereby recommended:

1. Further study on students' achievement scores and satisfaction levels after teaching and learning by using Gamification model with students in other schools, grades and other sample groups.
2. Further study on students' achievement scores and satisfaction levels after teaching and learning by using Gamification model in other learning units and or other subjects.

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