

Research Article

INTEGRATION OF GAMIFICATION APPROACH IN EFL CLASSROOM CONTEXT

Received: April 21, 2020

Revised: May 25, 2020

Accepted: May 27, 2020

Nutreutai Arunsitot^{1*}

¹Chiang Mai Rajabhat University, Chiang Mai 50130, Thailand

*Corresponding Author, E-mail: a_sudrutai@hotmail.com

Abstract

This study aimed to investigate whether the integration of gamification approach in English classroom for English-majored students was effective in improving their English syntactic knowledge and to explore the students' opinions on the integration of gamification approach in their classrooms. The sample group was divided into the experimental and control groups with a total number of 64, and each group equally consisted of 32 students. They enrolled in the English Syntax 1 core course in sections 1 and 2 respectively. The control group was given an ordinary lecture using a course- book with the supplementary materials. However, the experimental group was integrated the gamification approach in the learning process. The research instruments included the pre- and post- tests, and a questionnaire on integrating gamification. The results revealed that the posttest mean of the experimental group was higher than that of the control group. It can be concluded that using the integration of gamification approach could significantly enhance the students' English syntactic knowledge. Additionally, the overall opinions on the integration of gamification approach were at a highest level (4.61).

Keywords: Gamification Approach, Classcraft Application, English Syntax

Introduction

Having received large amount of attention, motivation is a major concern in English learning process of EFL students around the world (Getmanee, 2005; Lim, 2012; Wang, 2007; Chalak & Kassain, 2010; Choosri & Intharaksa, 2011; Ghanea et al., 2011; Zhao, 2012). As Gardner (1985) mentioned, motivation was considered to be a direct cause of achievement in learning. In other words, without motivation, the students can hardly accomplish their intended goals in their study. Motivation, therefore, plays a crucial role as the driving key for students to provide impetus for and direction to action (Schunk et al., 2008).

In Thailand where English is considered as a foreign language, English proficiency of Thai people is classified as very low, which was ranked 74th out of 100th listed countries with the average scores of 47.61 (EF EPI, 2019). The lack of motivation is one of the important factors influencing the causes of the failure in English learning (Noom-Ura, 2013). Additionally, Kitjaroonchai (2012) asserted that the static classroom and lack of students' involvement might result in low motivation of the students.

Gamification is an approach "using game-based mechanics, aesthetics and game thinking to engage people, motivate action, promote learning, and solve problems" (Kapp, 2012). Unlike game-based learning, gamification is an integration of game elements and game thinking used within non-game contexts in order to increase motivation and engagement, and to influence user behavior (Marczewski, 2013). Thus, implementation of game elements in education could transform the learning process as a whole into a game which creates an enjoyable environment that keeps students stimulated and craving more. Within this approach, the game elements such as achievement badges, points, leaderboards, levels, quests, and progress bars will play a key role in students' learning processes which allow teachers to persuade their students' progress as well as create students' engagement, active learning, and motivation by learning experience in their language classroom.

As Kiryakova et al. (2014) mentioned, the main problems in modern education are related to the lack of students' engagement and motivation to participate actively in the learning process. Like other educational settings, there are a number of factors which impact the students' motivation in English classroom at Chiang Mai Rajabhat University. One of the main issues is that the students themselves are culprits to this problem. With a high proportion of students from ethnic minority groups, language levels in the form of linguistic distance between their mother tongues and English have become the root cause of the lack of students' motivation (Arunsirot, 2017). The second related issue is that students' shyness and lack of confidence, which are in part culturally motivated lead them to resist

the participation in classroom activities (Rafatjou, 2019). Additionally, another critical issue is the teaching strategy. Since a teacher-centered learning has been prominent for such a long time in Thai educational system, the students tend to resort to a rote-learning system where they learn their knowledge by memorizing concepts and ideas. Consequently, they lack logical thinking skills which prevent them to actively participate in class and cause a downward spiral of further low motivation. Furthermore, the use of technology is another concerned issue facing students. As Rafatjou (2019) stated, the era of technology has created barriers for CMRU students' learning process. Obviously, it distracts the students' attention in the classroom which becomes a trigger for lacking of academic motivation. Because of the factors mentioned above, the teachers need to find new techniques and approaches to provoke student's activity and motivate them to participate in their language classroom. Gamification would be a sensible approach to fulfill this kind of gaps in the Thai education system.

Thus, this study focuses on the integration of gamification approach for English-majored students to increase their knowledge, motivation and engagement in their English classroom. With this approach, the students could develop their learning system in terms of learning behavior, teamwork skills, engagement, motivation and enjoyment based on the gamification concept which indirectly impact on their knowledge and skills. Apart from the contribution upon the students, designing gamified learning activities in English classroom would allow the teachers to adapt their teaching styles towards the students' needs, preferences and requirements.

Objectives of the Study

1. To investigate whether or not the integration of gamification approach in English classroom for English-majored students was effective in improving their English Syntactic knowledge
2. To explore the students' opinions on the integration of the gamification approach in the instructional activities.

Literature Review

The literature review consisted of three main concepts: motivation for learning English, an overview of gamification approach, and Classcraft application

1. Motivation for Learning English

According to second language acquisition, motivation is one of the main factors leading the success in language learning. To deal with the language difficulty, learners have to develop and utilize their language strategies and motivation that may affect success or failure in language learning. As Gardner

(1985, p. 10) defined, motivation is ‘the extent to which the individuals work or strive to learn a language because of the desire to do so and the satisfaction experienced in this activity’ and also as ‘a complex of three characteristics which may or may not be related to any particular orientations’. Moreover, he posited two main orientations: integrative and instrumental. Integrative orientation refers to a favorable attitude toward the target language community; or possibly a wish to integrate and adapt to a new target culture through use of language. However, instrumental motivation refers to a more functional reason for learning a target language, such as job promotion, or a language requirement.

Gardner’s socio-educational model of motivation focuses on the integrative motivation. It was the central concept of the model. He identifies a number of factors which are interesting when learning a second language. In the socio-educational model, second language motivation includes three elements: effort to learn the language, goal achievement, and language learning enjoyment.

2. An Overview of Gamification

As Anderson et al. (2017) stated, gamification exploits game mechanics or elements in non-game settings by using applications to motivate learners and engage learner’s achievement. It provides the motivation for learners to solve problems, do activities and apply to real-world situations. Learners could get the learning motivation by getting rewards, points, achievements badges and levels. In other words, the learners are encouraged to concentrate on their studies and enhance their motivation through using the gamification, the process of game in the education context. Robson et al. (2015) proposed the framework of gamification design, as illustrated in Figure 1.

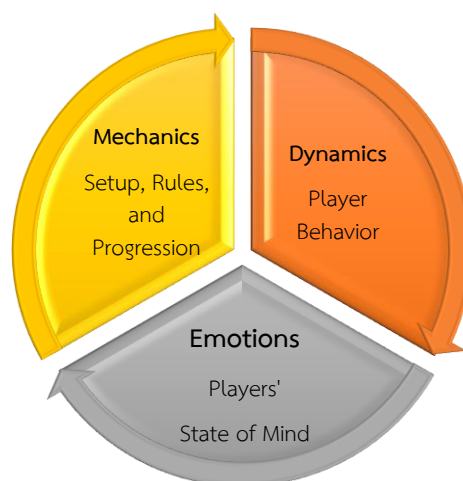


Figure 1 MDE Gamification Framework Design (Robson et al., 2015)

Three components which are the keys to successful gamification are mechanics, dynamics and emotions. Firstly, mechanics consist of the designed aspects of the gamified system, including goals, rules, contexts, boundaries, and types of interactions. Additionally, three types of mechanics are proposed in the MDE framework. Setup mechanics refer to the context of the experience. Rule mechanics refers to the goals, allowable actions and constraints. And progression mechanics refer to the rewards and reinforcements that are used to influence players' behavior. Secondly, dynamics relate to the actions of the player which may approach a game with different strategies and may react to game mechanics in different ways. Finally, emotions are regarded as the most important component, highlighting the emotional experiences in motivating the players' behavior.

3. Classcraft Application

Classcraft application is a role-playing game supported by a digital platform where teachers and students can play together in the classroom. It is used as a software tool for the integration of gamification approach in this present study. In Classcraft, the teacher acts as a 'game master' whereas the students are required to sign up as 'players'. In the first step, the students will be asked to form into groups and identify their own characters as an avatar which has different powers. Figure 2 presents the avatars with their powers in Classcraft application.

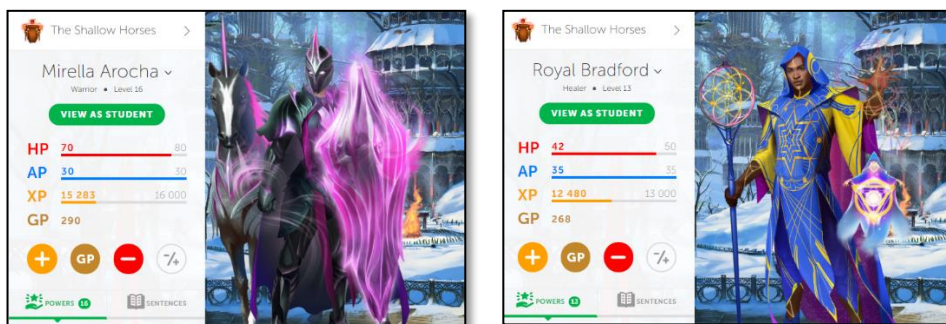


Figure 2 The avatars with the power in Classcraft application

The learning objectives and game rules set by the game master have to be clearly defined in the first place. Some examples of game rules in Classcraft Application are illustrated in Figure 3.

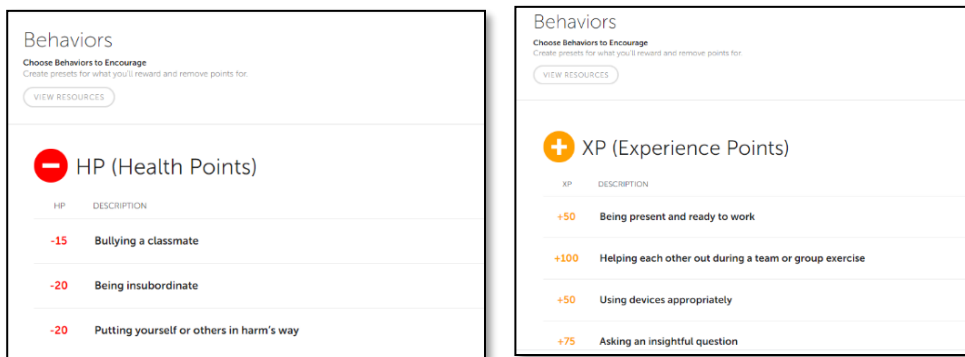


Figure 3 The game rules in Classcraft application

Game elements, the basic principles of gamification approach, will be integrated in the students' learning activities which is expected to stimulate them to achieve their learning objectives. The efficiency of tasks or activities given in the class leads to accumulation of points, transition to higher levels, and winning rewards. Classcraft application provides the different class tool to gamify any activities in the class in order to generate more fun and engagement. Figure 4 illustrates the class tools in Classcraft application.

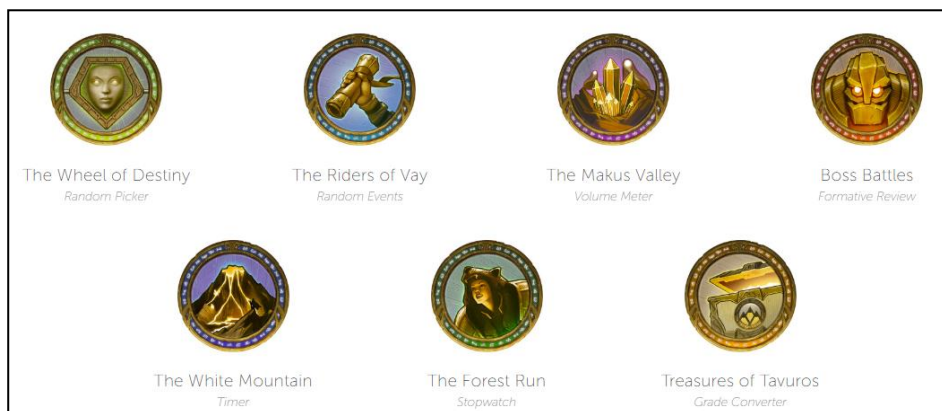


Figure 4 The class tools in Classcraft Application

Research Methodology

The methodology of the research procedure included four major sections: participants of the study, research design, research instrument, and data collection and analysis.

1. Participants of the study

The participants of this study were divided into two groups: one control group and one experimental group. Each group consisted of 32 second-year English students in the first semester of the 2020 academic year. So, the total number of the participants was 64. They were enrolled on a core course entitled 'English Syntax 1' in section 1 and 2 respectively.

2. Research Design

The research was a pretest-posttest control group design. Before participating in the class, both groups were required to take a pre-test to obtain their knowledge background in English Syntax. Subsequently, the control group was given an ordinary lecturer using a course-book and supplementary materials. However, the experimental group was integrated the gamification approach in the students' learning process. At the end of the course, a posttest was administered for both groups in order to compare their learning achievements. The pre- and post- tests were identical for both groups.

3. Research Instrument

There were two research instruments used for this investigation as follows:

3.1 The pre- and post- tests measuring the students' syntactic knowledge

The pre – and post – tests comprise 100 identification and classification questions with the total scores of 50 points, including the categories and principle structures of phrases, clauses, and sentences in the English language.

3.2 The questionnaire was used to measure the students' opinions on the integration of the gamification approach.

This questionnaire consisted of 16 close-ended questions focusing on the levels of students' opinions on the integration of the gamification approach. The questionnaire was designed by using the 5–point rating scale which corresponded with the lowest and highest levels of the students' agreement. It was evaluated by three experts with the reliability at $\alpha \geq 0.895$.

4. Data Collection and Analysis

The study was conducted with two classes from June to September in 2019, totaling 14 weeks of classroom sessions and two weeks of midterm and final examinations. The data collection procedures were divided into three phrases as follows:

4.1 Pre-experimental study

The pre-test was administered in the exam periods prior to the instruction in the first week. The orientation session provided instructions regarding the use of Classcraft application.

Then the students were required to form their teams and also assigned to sign up as ‘players’ in Classcraft application. Next, the students created their own characters presented in the forms of ‘Warrior, Mage, or Healer’. Each character has different powers including health points, action points, and experience points, with each student being assigned different roles in the team. Each group member was assigned responsibilities in the team. The warriors are the game’s protectors, mages are the game’s suppliers, and healers perform healing functions in the game. Team setup was meant to promote teamwork and social skills among the team members.

1) During experimental study

In order to enhance students’ knowledge, motivation and engagement, the gamification approach was integrated in the students’ learning process through the Classcraft application. Subsequently, it is essential for the teachers to develop their teaching methods which allow the students to interact with the learning contents and to participate in learning activities with a competitive nature. Thus, the teaching method used in this study was divided into four steps: presentation, practice, production and evaluation.

In the first step, the students were exposed to the contents in the course-book through the ordinary lecturer with the supplementary materials, such as, PowerPoint, and YouTube. Next, the learning activities, comprising gap-fill exercises, discussion, sequence, matching, classification exercises, and identification exercises were given to the students in the second step. At the same time, points and progress bars were used in these two steps to score the powers of students’ avatars and to show their progress in English Syntactic learning. To get more powers, the students had to earn their experience points (XP) by behaving in a positive way that obliged them to become better learners, e.g., completing the task, answering the questions in class, working together or finishing the exercises on time. However, the students could lose their health points (HP) for behaving in a negative way, e.g., being late in class, late submission of assignments/homework, or chatting in class. For the production step, levels and competitions were applied to make the classroom atmosphere to become game-like environment. The teacher could choose the different class tools to gamify any activities in the class to generate more fun and engagement. With different class tools, the students as a separate team could compete with one another and earn more powers to level up. Finally, in the evaluation step, the boss battles were used to review the formative assessments. Every team would be randomly selected to participate in the competitions. The winner could earn the powers and the teachers could reward any teams for their teamwork, collaboration, and effort. The final week was mostly concerned with the posttest processes,

as well as the gathering of the students' opinions through the questionnaire. Figure 5 illustrates the teaching method with the integration of gamification approach used in this study.

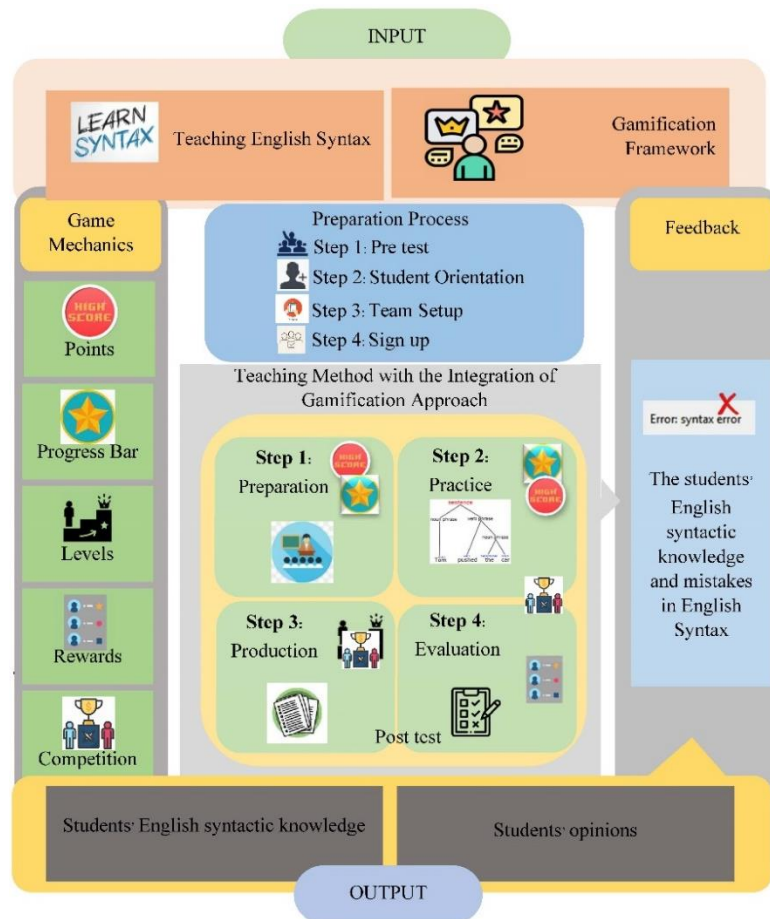


Figure 5 The teaching method with the integration of gamification approach used in this study

2) Post-experimental study

The post-test took place in the exam period following the instruction. Additionally, the students' learning achievements on English syntax between the control and experimental groups were compared in terms of the t-test, mean, and standard deviation. After that, the questionnaire was distributed to the students in order to investigate the students' opinions on the integration of gamification approach in their learning process. In addition, the data elicited from the questionnaires were analyzed for mean and standard deviation.

Research Findings

The results of comparison of English syntactic knowledge of the pretest between the control and experimental groups were analyzed by means of t-test, mean, and standard deviation. The statistics were shown in Table 1.

Table 1 Comparison of English syntactic knowledge of the pre-tests conducted between the control and experimental groups

Group	N	\bar{x}	S.D.	t	Sig.
Control group	32	11.50	4.166	- 0.538	0.593
Experimental group	32	12.03	3.729		

Table 1 presents the comparison results of English syntactic knowledge of the pre-test conducted between the control and experimental groups. The pretest mean of the control group was 11.50 whereas that of the experimental group was 12.03. The t-test indicates that there is no significant difference of the pretest means between the control and experimental groups. It can be concluded that both groups have the same level of knowledge in English syntax.

Regarding the comparison of English syntactic knowledge of the post test conducted between the control and experimental groups, the results are shown in Table 2.

Table 2 Comparison of English syntactic knowledge of the post tests conducted between the control and experimental groups

Group	N	\bar{x}	S.D.	t	Sig.
Control group	32	37.47	4.752	- 4.901	0.000
Experimental group	32	42.25	2.806		

Table 2 presents the comparison results of English syntactic knowledge of the post test conducted between the control and experimental groups. The posttest mean of the control group was 37.47 whereas that of the experimental group was 42.25. The posttest mean of the experimental group was higher than that of the control group. The t-test indicates that there is a statistically significant difference between the posttest means of the control and experimental groups at the 0.01 level. It can be concluded that the integration of gamification approach in the learning process could significantly enhance the students' English syntactic knowledge.

As the questionnaires were conducted to measure the students' opinions on the integration of gamification approach in the learning process, the results were illustrated in Table 3.

Table 3 The students' opinion towards the integration of gamification approach in the learning process

Opinions	Mean	Levels of Opinion
1. The integration of gamification approach is simple and user-friendly.	4.23	high
2. The integration of gamification approach helps students to be actively involved.	4.67	highest
3. The integration of gamification approach makes the classroom atmosphere more fun.	4.80	highest
4. The integration of gamification approach makes the class contents more interactive.	4.53	highest
5. The integration of gamification approach can increase the students' motivation in the classroom	4.74	highest
6. The integration of gamification approach helps students to become more engaged in class.	4.64	highest
7. The integration of gamification approach enhances the social skill.	4.57	highest
8. The integration of gamification approach increases the students' learning experience.	4.65	highest
9. The integration of gamification approach stimulates the students' curiosity.	4.57	highest
10. The integration of gamification approach provides instant feedback which facilitates the students' learning process	4.70	highest
11. The integration of gamification approach affects behavioral change of the students.	4.52	highest
12. The integration of gamification approach makes the lessons more interesting and entertaining.	4.79	highest
13. The integration of gamification approach improves the students' productivity	4.52	highest
14. The integration of gamification approach reduces language barriers because it presents the contents in the form of game environment in the educational setting.	4.70	highest
15. The integration of gamification approach increases students' participation in class.	4.65	highest
16. The integration of gamification approach improves and increases the students' memory.	4.42	high
Overall	4.61	highest

Table 3 shows the students had an overwhelmingly positive attitude towards the integration of gamification approach in the learning process. Apparently, the overall opinion of the students was at the highest level (4.61). As gamification is the application of game elements into learning process for the purpose of promoting motivation and engagement in learning, the concepts of fun, interesting and entertaining play the dominant roles in this study with the mean scores of 4.80 and 4.79 respectively. For fun functions as a part of the learning process, it positively increases the students' motivation with the mean of 4.74. Moreover, the gamification provides instant feedbacks which facilitate the students' learning process with the score of 4.70 in addition to helping to resolve language barrier in order to provide clear learning pathway with an addition of the game elements to the structure of the content. Consequently, being active in class (4.67), the learning experience (4.65), the participation (4.65) and the engagement (4.64) of the students increased respectively, which led to enhance their stimulating curiosity (4.57), social skill (4.57), interaction (4.53), productivity (4.52) and behavior change (4.52) of the students. Furthermore, the students found that integrating gamification in the classroom improves and increases their memory and it is also an easy, user-friendly application at a high level with the mean scores of 4.42 and 4.23 respectively.

Conclusion and Discussion

In comparing the post-test means between the control and experimental groups, it is found that the post-test mean of the experimental group was higher than that of the control group. Besides, the students have positive opinions towards the integration of gamification in the study. Obviously, it is highly beneficial for the students. The experimental group integrated by gamification approach performed better than those in the control group. It is in line with Huang and Soman (2013), who stated that even though gamification is not directly associated with knowledge and skills, it affects student's behavior, commitment and motivation, which can lead to enhancement of knowledge and skills afterwards. Furthermore, Glover (2013) stated that as gamification itself combined with social constructivism, behaviorism, cognitivism, experience-based learning and also self-paced learning theory, these theoretical backgrounds would develop the language learners' competence in which setting, participant, purpose, channel and topic are mainly focused. In particular, gamification provides the motivation for learners to solve problems, do activities and apply to the real-world situations. Learners will get the learning motivation by receiving rewards, points, achievement badges and levels (Anderson et al., 2017). Similarly, the integration of gamification approach in this study had brought about a positive contribution to improve the student's knowledge. This is consistent with empirical evidences reported in

Kumar and Khurana (2012); Barata et al. (2013); Betts et al. (2013); Brewer et al. (2013); de Freitas and Freitas (2013); Gibson et al. (2013); Todor and Pitica (2013); Hanus (2015); Kingsley and Grabner-Hagen (2015). Furthermore, it is especially beneficial for the teachers as it allows them to monitor the students' progress which in turn lets the teachers perceive the students' weaknesses and strengths easily. As a result, the teachers can tailor some gamified learning activities to meet individual needs of different students, which could cultivate their knowledge as well.

Since the advantages of gamification in the classroom are versatile, the overall opinions of the experimental students were found to be at the highest level. The concept of applying the idea of game in educational setting can capture the students' attention. Once attention is captured and inspired, motivation, engagement, and effort will be increased. This is in line with previous studies. Flores (2015) revealed that gamification could help students to reduced their shyness automatically and focus more on their pace. Subsequently, their behavioral changes boost their motivation, collaboration and interaction in the classroom. Additionally, Zichermann and Cunningham (2011) defined gamification as 'the process of game-thinking and game elements to engage users to solve problems. Gamification, according to Simões et al. (2013), focused on the social aspects influenced by integrating gamification. Farber (2013) further emphasized the critical thinking skill that could be active in an educational context due to gamification approach. According to Hamari et al. (2014), gamification is mainly focused on motivational affordances resulting in behavioral changes as an outcome of the study. Regarding Zickermann (2010), the feeling of fun created in the player through the feeling of achievement could allow for better learning in gamification. Thus, it could be said that these empirical studies highlighted the strong connection between gamification, motivation, engagement, effort, critical thinking skill, social skill, 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 gameful activities. 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 offer students an experiential element that is far more effective than traditional learning within the digital transformation trends in education.

References

- Anderson, T. A. F., Reynolds, B. L., & Powers, B. M. W. (2017). An approach to accent visualization for the reduction of vowel pronunciation errors. *Proceeding of the 25th International Conference on Computers in Education* (pp. 914-918). Christchurch: New Zealand.
- Arunsirot, S. (2017). Implementing a Speech Analyzer Software to Enhance English Pronunciation Competence of Thai students. *Journal of Education Burapha University*, 28(2), 116-129.
- Barata, G., Game, S., Jorge, J., & Goncalves, D. (2013). Engaging engineering students with gamification. *Proceedings of the fifth outing of the International Conference on Games and Virtual Worlds for Serious Applications* (pp. 1-8). DOI: 10.1109/VS-GAMES.2013.6624228
- Betts, B. W., Bal, J., & Betts, A. W. (2013). Gamification as a tool for increasing the depth of student understanding using a collaborative e-learning environment. *International Journal of Continuing Engineering Education and Life-Long Learning*, 23(3-4), 213-228.
- Brewer, R., Anthony, L., Brown, Q., Irwin, G., Nias, J., & Tate, B. (2013). Using gamification to motivate children to complete empirical studies in lab environments. *Proceedings of the 12th International Conference on Interaction Design and Children* (pp. 388-391). <https://doi.org/10.1145/2485760.2485816>
- Chalak, A., & Kassain, Z. (2010). Motivation and attitudes of Iranian undergraduate EFL students towards learning English. *GEMA Online Journal of Language Studies*, 10(2), 37-56.
- Choosri, C., & Intharaksa, U. (2011). Relationship between motivation and students' English learning achievement: A study of the second-year vocational certificate level Hadyai Technical College students. *The 3rd International Conference on Humanities and Social Sciences* (pp. 1-15). Songkla: Faculty of Liberal Arts, Prince of Songkla University, Thailand.
- de Freitas, A. A., & de Freitas, M. M. (2013). Classroom Live: A software-assisted gamification tool. *Computer Science Education*, 23(2), 186-206. DOI: 10.1080/08993408.2013.780449
- EF English Proficiency Index. (2019). *The world's largest ranking of countries and regions by English skills*. Retrieve from <https://www.ef.com/wwen/ept/>
- Flores, J. F. (2015). Using gamification to enhance second language learning. *Digital Education Review*, 27, 42-43.
- Gardner, R. C. (1985). *Social psychology and second language learning: The role of attitudes and motivation*. London: Edward Arnold Publishers.

- Getmanee, B. (2005). Components contributing to English oral proficiency: A case study of the undergraduates of King Mongkut's Institute of Technology North Bangkok. *The Journal of Industrial Technology*, 1(1), 52-59.
- Ghanea, M., Pisheh, H. R. Z., & Ghanea, M. H. (2011). The relationship between learners' motivation (integrative and instrumental) and English proficiency among Iranian EFL learners. *World Academy of Science, Engineering and Technology*, 59, 458-464.
- Gibson, D., Ostaszewski, N., Flintoff, K., Grant, S., & Knight, E. (2013). Digital badges in education. *Education and Information Technologies*, 20(2), 1-8. DOI: 10.1007/s10639-013-9291-7
- Glover, I. (2013). Play as you learn: gamification as a technique for motivating learners. Sheffield Hallam University: Sheffield Hallam University Research Archive.
- Hamari, J., Koivisto, J., & Sarsa, H. (2014). Does gamification work? — A literature review of empirical studies on gamification. *Proceedings of the Annual Hawaii International Conference on System Sciences*. 10.1109/HICSS.2014.377.
- Hanus, M. D. (2015). Assessing the effects of gamification in the classroom: A longitudinal study on intrinsic motivation, social comparison, satisfaction, effort, and academic performance. *Computers & Education*, 80, 152-161. <http://doi.org/10.1016/j.compedu.2014.08.019>
- Huang Hsin Yuan, W., & Soman, D. (2013). *A practitioner's guide to gamification of education*. Research Report Series: Behavioral Economics in Action. University of Toronto –Rotman School of Management.
- Kapp, K. M. (2012). *The gamification of learning and instruction: game-based methods and strategies for training and education*. San Francisco, CA: Pfeiffer.
- Kingsley, T. L., & Grabner-Hagen, M. M. (2015). Gamification: Questing to integrate content, knowledge, literacy, and 21st-century learning. *Journal of Adolescent & Adult Literacy*, 59(1), 51-61.
- Kiryakova, G., Angelova, N., & Yordanova, L. (2014). Gamification in education. *Proceedings of 9th International Balkan Education and Science Conference*. Edirne: Turkey.
- Kitjaroonchai, N. (2012). Motivation toward English language learning of Thai students majoring in English at Asia-Pacific International University. *International Journal of Language and Linguistics*, 1(1), 22. DOI: 10.11648/j.ijll.20130101.14
- Kumar, B., & Khurana, P. (2012). Gamification in education-learn computer programming fun. *International Journal of Computers and Distributed Systems*, 2(1), 46-53.

- Lim, S. (2012). EFL motivational orientation and proficiency: A survey of Cambodian university students in Phnom Penh. *Philippine ESL Journal*, 8, 52-82.
- Marczewski, A. (2013). *What's the difference between gamification and serious games?* Retrieved from http://www.gamasutra.com/blogs/AndrzejMarczewski/20130311/188218/Whats_the_difference_between_Gamification_and_Serious_Games.php
- Noom-ura, S. (2013). English-teaching problems in Thailand and Thai teachers' professional development needs. *English Language Teaching*, 6(11), 139-147.
- Rafatjou, P. (2019). Work-based learning: Case study a pilot program for business English students at Chiang Mai Rajabhat University, Thailand. *Journal of Humanities and Social Sciences, CMRU*, 1(2), 3-13.
- Robson, K., Plangger, K., Kietzmann, J., McCarthy, I., & Pitt, L. (2015). Is it all a game? Understanding the principles of gamification. *Business Horizons*, 58(4), 411—420.
- Schunk, D. H., Pintrich, P. R., & Meece, J. L. (2008). *Motivation in education: Theory, research and applications* (3rd ed.). Upper Saddle River, NJ: Pearson.
- Simões, J., Redondo, R., & Vilas, A. F. (2013). A social gamification framework for a K-6 learning platform. *Comput. Hum. Behav.*, 29, 345-353.
- Todor, V., & Pitica, D. (2013). The gamification of the study of electronics in dedicated e-learning platforms. *Proceedings of the 36th International Spring Seminar on Electronics Technology*, 428-431.
- Wang, X. (2007). Three ways to motivate Chinese students in EFL listening classes. *The Asian EFL Journal*, 17, 1-16.
- Zhao, H. (2012). *Explicitness, cue competition, and knowledge tracing: A tutorial system for second language learning of English article usage*. Pittsburgh, PA: Carnegie Mellon University.
- Zichermann, G., & Cunningham, C. (2011). *Gamification by design: Implementing game mechanics in web and mobile apps*. Sebastopol, CA: O'Reilly Media.
- Zickermann, G. (2010). *Fun is the future: Mastering gamification*. Google Tech Talk. San Francisco, CA, U.S.A.: Google Tech Talk. Retrieved from <https://www.youtube.com/watch?v=601gNVeaE4g>