Gamification approach to enhance students' engagement in Online Distance Learning (ODL) Classes

Rosfatihah Che Mat, Sakinah Mat Zin

Faculty of Business Management, Universiti Teknologi MARA, Kelantan Branch, 18500 Machang, Kelantan, Malaysia
rosfa407@uitm.edu.my

Abstract: Online Distanced Learning (ODL) is an online learning method that has been used during outspread of the COVID-19 Pandemic. Conducting ODL can be tough. It is especially challenging when it comes to ensuring the active engagement of students. Many business and management disciplines include the so-called dry or uninteresting content that requires intense concentration and undivided attention from students. Hence, it is a must for business management lecturers to ensure active engagement so that they could assess students' understanding of the subject matter delivered throughout the Online Distance Learning (ODL) sessions.Thus, the purpose of this conceptual paper is to propose gamification as an approach in assessing student's understanding. Gamification makes learning more enjoyable experience especially during the pandemic as students undergo ODL lessons at their homes. Theoretically, this paper contributes to the existing literature of gamification in online learning and teaching assessments. Practically, it contributes in increasing the awareness on how the gamification can be used in any subject of business management online classes. Further experimental studies will be conducted to investigate how game-based approach assists in enhancing students' engagement, understanding of business management subject, as well as how gamification can stimulate excitement and communication skills among students.
Keywords: Assessment, Gamification, online learning, student engagement.

INTRODUCTION

The present state of emergency caused by the COVID-19 Pandemic has resulted in many sudden changes in the education system. Business and management students has transitioned from traditional to online learning. However, thanks to technology advancements, lecturers are able to apply various mediums and approaches while carrying out the online learning. Online learning does not only change the teacher's way of teaching but also changes the student's way of learning. In fact, online learning has dramatically changed the way people learn (Sun, 2011). Previous research on online learning were conducted before the pandemic (Rosalina, Nasrullah & Elyani, 2020). Thus, in this research, the focus is on ODL classes during the pandemic, in which the gamification approach is proposed to create a more enjoyable experience in the learning process.

However, a key challenge in teaching a business and management subject is keeping the students actively engaged and motivated in the subject course. Some students do not find the subject attractive. Hence, more often than not, they do not make an effort to pose questions to the lecturer during lectures. During the conduct of teaching and learning activities, the interaction between students and educator is critical.(Jonathan & Recard, 2021). Common issues which regards to learning are the lack of interest to study and the tendency to give up easily. Barrot, Llenares & Del Rosario (2021) revealed that the COVID-19 Pandemic had the greatest impact on he quality of the learning experience and students' mental health. Eventhough, the role of information technology and COVID-19 Pandemic in accelerating current and future online learning is considered a panacea at the time of crisis, the following problems still exist:

   i.   Students tend to neglect the given traditional revision questions during tutorial class.
   ii. Students show lack of enthusiasm in learning business and management subject.
   iii. Students have difficulties in understanding the lessons by showing defiant behaviours; e.g. joining online class late, or even skipping classes.

What could be the reasons behind these issues? How to make ODL classes more engaging and motivating during e-learning? What is the effect of gamification techniques on student engagement? The objectives of this research are as follows:

    i.   To identify a method that makes ODL classes be more engaging and motivating during e-learning.
    ii.   To examine the effects of gamification techniques on student engagement.

The main objective of the gamification technique is to ensure that students are actively engaged in class by answering the questions and to incorporate fun and play into business and management subject. Gamification was produced to assist students in improving their understanding the subject concepts. It is a solution to boost students' interest in doing revisions via using gamification approach via Quizizz, an application for gamification of learning. Students love to play games, and this is one of the ways in which they learn. By bringing game-based activities into the classroom, it boosts students' learning and their assimilation of new topics. Gamification helps students to learn the concepts better as it students have competitive spirits. In individual activities, , there was an urge in students to outperform each other, which means that the students would make a special effort to get things done. Similarly, group tasks also had a high level of collaboration resulting in effective learning (Raju, Bhat, Bhat, D'Souza & Singh, 2021). Intriguing to identify gamification techniques affecting student engagement, the present study is presented with the conceptual framework, method, concept of online learning, students' engagement, gamification approach and how this approach can help with student assesstments in the ODL process.

CONCEPTUAL FRAMEWORK

The aim of teaching and learning process can be looked in terms of student's gaining a good understanding of the subject matter for a particular class. Thus, the purpose of this article is to suggest gamification as a motivational element for students' participation in any business management subject through ODL lessons. In particular, this study aims to examine the effects of gamification techniques on student engagement. To do this, the study seeks upon two theories, namely Landers' Theory of Gamified Learning

and Behavioral Reasoning Theory (BRT).

Despite the fact that the term "gamification" is relatively new, the theory behind it provides a useful framework for learning design (Broer 2015; Stott & Neustaedter 2013). Theory of Gamified Learning was introduced by Richard N. Landers in 2014. It provides some guidance on how to attain increased learning from gamification. The theory proposes a framework describing types of game features that can improve learning. Besides that, it also highlights on the link between gamification, effort and learning. Landers' Theory of Gamified Learning connects game and gamification by focusing on game qualities and it proposes a psychological theory of gamified learning, but with a focus on behavior change. According to the theory, gamification is defined as the use of game attributes outside the context of a game with the purpose of affecting learning-related behaviors or attitude (Landers 2014).

Behavioral Reasoning Theory (BRT) postulates that behavior (i.e., adoption of ODL) can be predicted by their global motives (Claudy, Garcia & O'Driscoll, 2015). Attitudes, subjective norm, and perceived control are defined as global motives in that they constitute broad substantive factors, which influence behaviors across different domains (Westaby, 2005; Ajzen & Madden, 1986). If students believe that ODL is an acceptable or even desirable act, they will have a stronger intention to employ gamification learning. BRT is a good model to predict student engagement as global motives, intentions, and reasons for engagement have a significant direct effect on engagement (Tani, Gheith & Papaluca, 2021).
Figure 1 provide a conceptual framework for this paper to explain how element in gamified learning and behavioral reasoning theory can influence the student engagement in ODL.
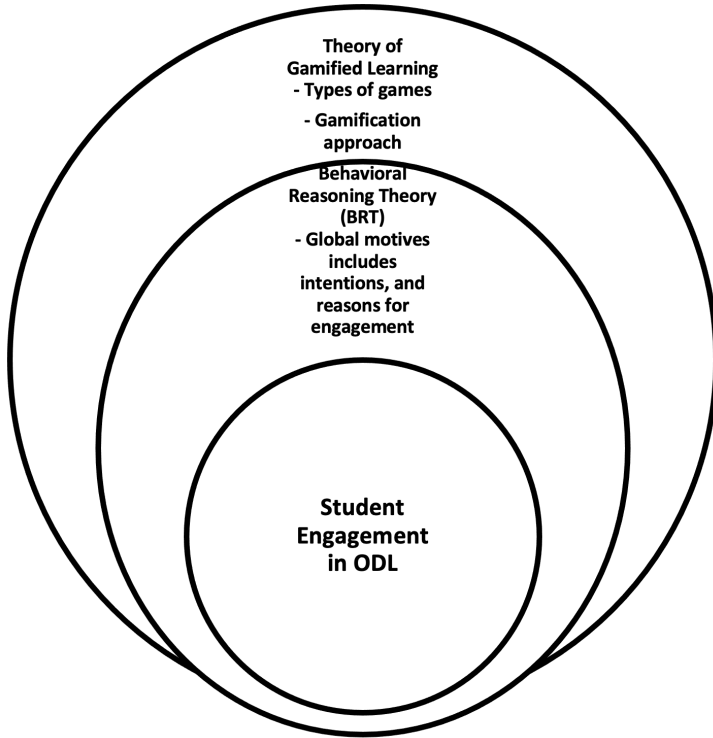
**Theory of
Gamified Learning
- Types of games**

**- Gamification
approach**

**Behavioral
Reasoning Theory
(BRT)
- Global motives
includes
intentions, and
reasons for
engagement**

**Student
Engagement
in ODL**

Figure 1 : Conceptual Framework

METHODOLOGY

For the purpose of literature search, the researcher has applied several steps to come out with the literature that suits the proposed framework. Below in Figure 2 are the step by step process on how the researcher did the literature search.

Using two academic search engine:

Google scholar and Scopus database

Using key word like online learning, student engagement, gamification approach and effect to student
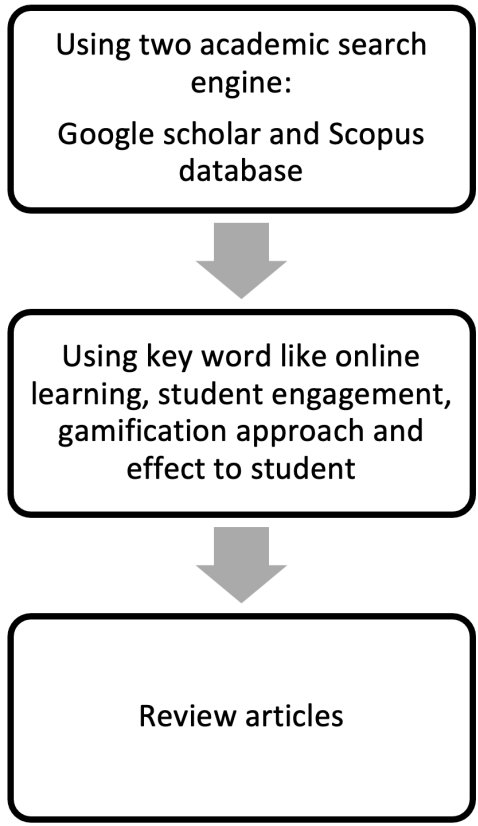
Review articles

Figure 2: Step by step for literature search

With some modifications, this study adopted the method used by Dalstrom (2003) to conduct the literature search relating to this study. Relevant literature was found through searches in the Scopus database as well as in Google Scholar. These articles generally review the approach for online distance learning and are considered relevant included scientific papers pertaining to:

- Learning difficulties found in the students
- Landers' Theory of Gamified Learning
- Behavioral Reasoning Theory (BRT)
- The concept of online learning
- Students' engagement
- Gamification approach
- How gamification technique affects student engagement

With a few exceptions, the selected papers on the subject of gamification were written as recent as 2021, since recent papers are considered as more reliable papers than papers written around the time of the most intense popularization of gamification. Papers on student engagement, however, were selected based on their importance to the topic at hand, regardless of the year they were published. All the articles collected have then been review discuss in the next section.

ONLINE DISTANCE LEARNING

Since the COVID-19 Pandemic hit the globe in 2020, online learning has become a common practice in the educational settings. Before the pandemic, there was still a blended structure of face-to-face and online learning activities. Online distance learning is a form of delivery of conventional learning which is reflected on digital format through the internet (Imania, 2019). Online distance learning is considered to be the medium for delivering material between teachers and students during pandemic chaos. As everyone is confined at home, classes are now conducted entirely online and students learn directly from their desktop, personal computer, or other devices. Concerns regarding any content of the online course are normally addressed by e-mail with the lecturers resulting in a response time (Zhong, 2020). Conventional classroom socialization is another major gap in online learning. Students only communicate with their classmates digitally. Some

students have also never see them in person. That being said, real-time sharing of ideas, knowledge and information is partially missing from the digital learning world (Britt, 2006).

Nevertheless, the technological advancement has greatly facilitates the diffusion of education to diverse parts of the world. Still, it might be complicated for educators to come up with an effective technique to motivate and engage students in the learning process (Alabbasi, 2017). In line with this, business and management lecturers must develop appropriate ways or tactics to address student motivation and attentiveness during online lessons in order to boost user engagement.

STUDENTS' ENGAGEMENT

The term students' engagement has many definitions in numerous studies. Previous literature defined students' engagement as activites performed either physically or mentally by the students in their pursuit to gain knowledge. There are many definitions that arise from numerous studies regarding the term of students' engagement. Most literature defined students' engagement as activities performed either physically or mentally by the students in their pursuit to gain knowledge (Dixson, 2015; Marx, Simonsen & Kitchel, 2016; Mohd, Hussein, Aluwi & Omar, 2016). On the contrary, Hu, Li, Deng & Guan (2016) describes students' engagement as activities that occur when the students are using the online learning platform in their lessons, as in this context, the learning materials can only be accessed by them.

Nurul and Mohamad (2018) shown how engagement is employed to hold students' attention for a length period of time. Students will not be motivated to complete the work if they are not engaged in the class. Learners are unable to engage with online learning for a variety of reasons, including inability to understand lessons, time constraints, learning materials, inability to complete assessments, lack of encouragement, language barriers, issues with instructor accessibility, passion, peer to peer interaction, interaction with the instructor, comparison of score, and explore learners (Nurul & Mohamad, 2018).

GAMIFICATION

A study done by Jonathan and Recard (2021) highlights many option to the educators to make their online classroom more engaging. One of it is through gamification techniques. Gamifcation refers to the use of game dynamics to engage and drive students to learn (Nurul & Mohamad, 2018). To put it another way, games are now an integral component of a student's everyday routine. They devote a significant amount of time to gaming. Surprisingly, gamification has made its way into the education field. It is to instruct students how to use play to generate an intellectual challenge, recognised procedures, and interactivity (Razali et al., 2020). Ab Rahman, Ahmad & Hashim (2019) also shows the feasibility of the gamification in a higher education teaching and learning process as many options and platforms are available to be utilized.

Sometimes, gamification is defined as a process of improving a service with (motivational) affordances for gameful experiences in order to sustain user's overall value creation (Huotari & Hamari, 2012). This definition reflects the widely held belief that the goal of gamification is to influence user behavior through user motivation. This motivation in turn can be positively influenced by the motivational affordances commonly found in games. This definition displays the extensively held perception that the aim of gamification is to influence user conduct through user motivation and that this motivation may in turn be manipulated by the motivational affordances located in games (Dalstrom, 2003). To determine whether gamification is in fact a useful concept within ODL, it is important to understand how gamification affect student motivation, and wether its implementation reliably lead to increased student engagement.

Hamari, Koivisto and Sarsa (2014) stated that there was a positive relationship between gamification and students' engagement. Seaborn and Fels (2015) inserted that gamification increased levels of motivation and engagement. Razali et al., (2020), showed that students' intrinsic and extrinsic motivation was at a moderate level after applying the gamification approach. In the interaction between students' extrinsic motivation from points, level of difficulty, and avatar construct, the gamification components employed in the Quizizz programme are significant. However, other empirical studies (Leaning, 2015; Berkling & Thomas, 2013) produced

negative or mixed results on the influence of gamification on motivation and engagement.

Francisco-Aparicio, Gutiérrez-Vela, Isla-Montes & Sanchez (2013) argued that higher levels of extrinsic motivation when using of gamification is not sufficient to be considered as its benefits. If no permanent positive behavior change is created in the learners, the long-term effects of gamification cannot be fully evaluated. This can only be done using a longitudinal study that captures the long-term effects of the relationship between gamification and students' motivation and engagement.

Nevertheless, gamification has attracted the attention of researchers and pedagogists as a mean to support students' learning, (Hamari et al., 2015; Kim et al., 2018). The gamification approach, which includes game components and game design methods in a non-game context, was used to stimulate student learning (Siti Nurul Mahfuzah et al., 2017).Korkealehto and & Siklander (2018) promotes the gamification approach as a useful approach that support educational technological and pedagogical possibilities as well as supporting efficient blended learning that suit in higher education. It is proven that gamified elements support student interaction, enabling integration of field-specific topics through versatility in assignments. It also supports contextualised professional language learning, collaboration, authenticity and self-regulated learning.

This study looked at the gamification learning platform that has been deployed in the classroom, i.e., the Quizizz. According to Pitoyo et al., (2020) students prefer to take the test via Quizizz because it allows them to enjoy the test as if it was a game. Furthermore, the game features are critical in this context because they transformed the test into a game with all of the gamification's dynamic and mechanics. Furthermore, Quizizz is being used to help students improve their grammar and understanding through self-assessment (Rahayu & Purnawarman, 2019). Considering all the elements in the online class, this study would like to propose the gamification technique using Quizizz platform to be used in the any subject related to business management.

EFFECT OF GAMIFICATION TECHNIQUE ON STUDENT ENGAGEMENT

Previous studies shown that there is a significant improvement in learners' engagement. In fact, gamification is a technique that can increase students' engagement (Sanmugam, Zaid, Abdullah, Aris, Mohamed & van der Meijden, 2016; Hanus & Fox, 2015; Dixson, 2015). The use of gamification techniques have resulted in a more engaging learning environment (Jonathan & Recard, 2021). Nurul and Mohamad, (2018) found that gamification can be integrated to all platforms and can help to better engage students in their learning. Moreover, gamification applications are generally effective in enhancing students' motivation to learn science, according to the findings by Hursen and Bas, (2019). They received positive feedback regarding the game from the learner. Students require effort-demanding, challenging, sophisticated learning systems that increase competency, enhance recall memory, concentration, attentiveness, commitment, and social interaction. Students also require effort-demanding, challenging, sophisticated learning systems that increase competency, enhance recall memory, concentration, attentiveness, commitment, and social interaction (Alabbasi, 2017).

A study by Sharma et al., (2020) show more than half (53.5%) of the students were satisfied with the online learning, while 29.7% gave neutral views. Other that that, a study by Park and Kim, (2021) notice the used of gamification techniques positively affects the motivation, self-efficacy, self-determination, career motivation, grade motivation, and understanding of learners. This positive impact can be attributed to the method used which offers learning experiences that differ from those of traditional teaching methods. Additionally, Rusmaini et al., (2021) showed that: (1) Online learning assisted gamification learning models have been deemed valid for usage; (2) There is a substantial change in the quality of student learning before and after employing online learning assisted gamification learning models.

CONCLUSION

Gamification is an option to making learning more engaging, entertaining, and effective in the learning process. This strategy isn't just like playing games but it's also about having the correct concept, clear goals, and the ability to engage pupils in learning. Based on the considerations above, it can be stated that gamification tactics utilising Quizizz have a favourable impact on students' engagement and comprehension. In addition, student responses regarding gamification and using explicit instruction has also shown positive results. Thus, this paper propose that gamification can increase student engagement in online class for business management. Furthermore, the results of this study indicate that the Quizizz application can increase the interest of student in class for more interactive lessons when used effectively. In conclusion, gamification is an appropriate technique to be used and may have an impact on students that leaves them more active and motivated to study. This new trend in teaching allows students to be leaders of their own education. Unlike the traditional teaching model, which places lecturers as the 'givers' of knowledge and the students as passive 'receivers', the gamification approach encourages lecturers to take a step back and for students to take responsibility for their own learning. The gamification method Quizizz allows students to measure their own progress and discuss it with their lecturer later. This builds their own self-awareness and lets them to choose their own learning path.

REFERENCES

Ab Rahman, R., Ahmad, S., & Hashim, U. R. (2019). A study on gamification for higher education students' engagement towards education 4.0. In Intelligent and Interactive Computing (pp. 491-502). Springer, Singapore.

Ajzen, I., & Madden, T. J. (1986). Prediction of goal-directed behavior: Attitudes, intentions, and perceived behavioral control. Journal of experimental social psychology, 22(5), 453-474.

Alabbasi, D. (2017). Exploring graduate students' perspectives towards using gamification techniques in online learning. Turkish Online Journal of Distance Education, 18(3), 180–196. https://doi.org/10.17718/tojde.328951

Barrot, J. S., Llenares, I. I., & Del Rosario, L. S. (2021). Students' online learning challenges during the pandemic and how they cope with them: The case of the Philippines. Education and Information Technologies, 1-18.

Berkling, K., & Thomas, C. (2013, September). Gamification of a Software Engineering course and a detailed analysis of the factors that lead to it's failure. In 2013 International Conference on Interactive Collaborative Learning (ICL) (pp. 525-530). IEEE.

Broer, J., & Breiter, A. (2015, September). Potentials of gamification in learning management systems: A qualitative evaluation. In European Conference on Technology Enhanced Learning (pp. 389-394). Springer, Cham.

Claudy, M. C., Garcia, R., & O'Driscoll, A. (2015). Consumer resistance to innovation—a behavioral reasoning perspective. Journal of the Academy of Marketing Science, 43(4), 528-544.

Dalstrom, C. (2003). Impacts of gamification on Intrinsic Motivation. URL: https://www. ntnu. edu/documents/139799/1279149990/04+ Article+ Final_camildah_fors% C3% B8k_2017-12-06-13-53-55_TPD4505.

Camilla. Dahlstr% C3% B8m. pdf/9e48c5f5-0d17-4276-a23e-434abfe65491,[accessed 2003-09-19].

Francisco-Aparicio, A., Gutiérrez-Vela, F. L., Isla-Montes, J. L., & Sanchez, J. L. G. (2013). Gamification: analysis and application. In New trends in interaction, virtual reality and modeling (pp. 113-126). Springer, London.

Hamari, J., Koivisto, J., & Sarsa, H. (2014, January). Does gamification work?--a literature review of empirical studies on gamification. In 2014 47th Hawaii international conference on system sciences (pp. 3025-3034). Ieee.

Huotari, K., & Hamari, J. (2012). Defining gamification: a service marketing perspective. Proceeding of the 16th International Academic MindTrek Conference, 17-22.

Hursen, C., & Bas, C. (2019). Use of gamification applications in science education. International Journal of Emerging Technologies in Learning, 14(1), 4–23. https://doi.org/10.3991/ijet.v14i01.8894

Imania, K.A. N. (2019). Instrument Development DesignLearning Based AssessmentOnline. PETIK Journal, 5, 31-47.

Jonathan, F. C., & Recard, M. (2021). The implementation of gamification concept inside online classroom activities to promote students ' engagement. International Journal of Indonesian Education and Teaching, 5(2), 176–184. https://doi.org/10.24071/ijiet.v5i2.3461

Korkealehto, K., & Siklander, P. (2018). Enhancing engagement, enjoyment and learning experiences through gamification on an English course for health care students. In Seminar. net, 14(1), 13-30).

Landers, R. N. (2014). Developing a theory of gamified learning: Linking serious games and gamification of learning. Simulation & gaming, 45(6), 752-768.

Leaning, M. (2015). A study of the use of games and gamification to enhance student engagement, experience and achievement on a theory-based course of an undergraduate media degree. Journal of Media Practice, 16(2), 155-170.

Nurul, S., & Mohamad, M. (2018). Gamification Approach in Education to Increase Learning Engagement. International Journal of Humanities, Arts and Social Sciences, 4(1), 22–32. https://doi.org/10.20469/ijhss.4.10003-1

Park, S., & Kim, S. (2021). Is sustainable online learning possible with gamification?—the effect of gamified online learning on student learning. Sustainability (Switzerland), 13(8). https://doi.org/10.3390/su13084267

Pitoyo, M. D., Sumardi, & Asib, A. (2020). Gamification-based assessment: The washback effect of quizizz on students' learning in higher education. International Journal of Language Education, 4(1), 1–10. https://doi.org/10.26858/ijole.v4i2.8188

Rahayu, I. S. D., & Purnawarman, P. (2019). The use of quizizz in improving students' grammar understanding through self-assessment. Advances in Social Science, Education and Humanities Research, 254, 102–106. https://doi.org/10.2991/conaplin-18.2019.235

Raju, R., Bhat, S., Bhat, S., D'Souza, R., & Singh, A. B. (2021). Effective Usage of Gamification Techniques to Boost Student Engagement. Journal of Engineering Education Transformations, 34, 713-717.

Razali, N., Nasir, N. A., Ismail, M. E., Sari, N. M., & Salleh, K. M. (2020). Gamification Elements in Quizizz Applications: Evaluating the Impact on Intrinsic and Extrinsic Student's Motivation. IOP Conference Series: Materials Science and Engineering, 917(1). https://doi.org/10.1088/1757-899X/917/1/012024

Rosalina, E., Nasrullah, N., & Elyani, E. P. (2020). Teacher's Challenges towards Online Learning in Pandemic Era. LET: Linguistics, Literature and English Teaching Journal, 10(2), 71-88.

Rusmaini, Sesriyani, L., & Anwar, S. (2021). The development of gamification model assisted by online learning to improve the quality of student learning in economic education at pamulang university. INCEESS 2020. https://doi.org/10.4108/eai.17-7-2020.2302975

Schneider, A., Karapanos, M., Borchert, T., Uhlig, S., & Günther, S. (2018). Online teaching: a behavioral reasoning theory approach. In Edulearn 18. 10th International Conference on Education and New Learning Technology:(Palma, 2nd-4th of July, 2018). Conference proceedings (pp. 6473-6479). IATED Academy.

Seaborn, K., & Fels, D. I. (2015). Gamification in theory and action: A survey. International Journal of human-computer studies, 74, 14-31.

Sharma, K., Deo, G., Timalsina, S., Joshi, A., Shrestha, N., & Neupane, H. C. (2020). Online learning in the face of covid-19 pandemic: Assessment of students' satisfaction at chitwan medical college of nepal. Kathmandu University Medical Journal, 18(2 COVID-19 Special Issue), 40–47. https://doi.org/10.3126/kumj.v18i2.32943

Siti Nurul Mahfuzah, M., Sazilah, S., & Norasiken, B. (2017). An Analysis of Gamification Elements in Online Learning To Enhance Learning Engagement. 6th International Conference on Computing & Informatics, 041, 452–460.

Stott, A., & Neustaedter, C. (2013). Analysis of gamification in education. Surrey, BC, Canada, 8, 36.

Sun, S. Y. H. (2011). Online language teaching: The pedagogical challenges. Knowledge Management & E-Learning: An International Journal, 3(3), 428-447.

Tani, M., Gheith, M. H., & Papaluca, O. (2021). Drivers of student engagement in higher education: a behavioral reasoning theory perspective. Higher Education, 1-20.

Westaby, J. D. (2005). Behavioral reasoning theory: Identifying new linkages underlying intentions and behavior. Organizational behavior and human decision processes, 98(2), 97-120.