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STUDENTS' ATTENTION AND CONFIDENCE IN LEARNING EXPERIENCE VIA GAMIFICATION

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Abstract

Gamification in learning has become an interesting tool in recent years to motivate and engage students. The aim of this paper is to examine the students' attention and confidence in learning experiences via Blackboard Learning Management System to engage in gamification of Self Development Skills course. Participants of this survey were 107 students from a private institution in Malaysia who had completed the 7 weeks course. The results indicated that the attention level of the students' learning experience was moderately good at 69.2%. Additionally, 65.4% of the students reported overall confidence with their learning in this course. Gamification in education could enhance the levels of students' engagement and optimize their learning. Thus, incorporating gamification in education is highly recommended as it can promote engagement and sustain motivation in learning.

Keywords: ARCS model of motivation, Confidence, Gamification, Attention.

1. Introduction

According to Johnson et al. [1], gamification is one of the emerging technologies that will have a significant impact on education in the world's most technologically advanced countries. Gamification, defined as "the use of game-design elements in non-game contexts," is one of the potential applications of modern technology for motivating students to learn [2]. It is also regarded as a novel approach to bridging the generational divide between teachers and students [3]. The Covid -19 outbreak has presented challenges for educational institutions, particularly higher education. In this millennium era of globalization, the growing popularity of online learning, students' perceptions of the application of online learning have become a priority for education. This method strongly promotes the fourth sustainable development goal (Quality Education) which aims at ensuring all students have access to inclusive, equitable education, and encourages opportunities for lifelong learning (The 17 Goals, 2016) [4].

Gamification seeks to actively influence learning-related behaviours and attitudes [5]. Gamification in education could boost the students' motivation and engagement in online learning. The theory of gamified learning suggests that gamification has a favourable, indirect impact on learning outcomes. Motivation in learning is critical because it encourages students to perceive information while learning. "Motivation is an internal process that activates, guides, and maintains behaviour over time," writes Slavin [6]. As a result, fun and interesting activities can be incorporated into learning to motivate students to pay more attention and engage in learning.

Furthermore, the most commonly used game components in gamification are experience points, levels, leader boards, challenges, and badges [7]. Experts have praised gamification's adaptability in education, where it could be applied in lectures, homework assignments, final exams, or as the primary learning activity to engage students, improve their skills, and maximize their learning. This adaptively proves that gamification increases student engagement and participation in the classroom and online [8].

In this paper, gamification would be used to assess the students' attention and confidence via Blackboard e-learning for the course of Self Development Skills. The content's theme was inspired by the story of Alice in Wonderland Adventure: Through the Looking Glass. Students travelled through various missions, collecting points for completing each mission, unlocking the next level, meeting new friends, and enlisting their help to complete the 7-weeks journey.

2. Methodology

2.1. ARCS model of motivation.

For this study, we used Keller's (1983, 1987) ARCS motivational model, which focuses on motivation to ensure the continuity of the learning process. The ARCS model has four components: Attention, Relevance, Confidence, and Motivation. The application of the ARCS model has confirmed the model's overall effectiveness in improving learning. According to Chyung [9], this model is critical for e-learning because motivating students in online courses is more difficult than in traditional classroom settings. In this regard, two components will be discussed in this paper: attention and confidence. Gaining and maintaining students' attention and active

engagement is referred to as attention, whereas confidence considers students' attitudes and achievement expectations [10].

According to Tsay et al. [11], designed a gamified course that utilised a wide range of game mechanics to engage people and meet the needs of a diverse class. Furthermore, teachers must pay attention and explain the learning objectives in accordance with the ARCS motivation model. The material being taught should be relevant to everyday life so that students can easily understand [12]. As a result, it could contribute to student-centred learning, capture students' attention and maintain their interest in learning a specific course.

2.2. Attention.

Different media, according to Keller's ARCS model, can promote attention and curiosity to varying degrees by moderating learners' attention and curiosity. It is primarily concerned with capturing and, more importantly, maintaining students' attention during the teaching process (Keller, 1987). Students would think that the novelty of the interactive and engaging nature of online educational games will draw their attention to learning activities including those games that are intended to help them improve their competencies [13]. Wena [14] proposed three components of a strategy for generating student attention in learning activities;

- Make an impression on the student by introducing novel, incorrect, or abrupt changes in the input. It causes many disagreements among the students, which motivates them to settle the disagreements.
- Make a research-friendly environment for students by encouraging them to ask questions and solve problems in order to obtain information. When students are asked questions or have problems, it is expected that their focus will shift to learning.
- Use a variety of teaching tools, such as different text styles, graphic presentations, and colour schemes. Students are expected to concentrate more and be more interested in their studies as a result of the changes intended for them.

As a result, bringing attention to the materials, such as gamified activities, could increase students' motivation in their learning practices. Therefore, the strategies for engaging students should be considered during the process of content development.

2.3. Confidence.

The third component of the ARCS motivational model is confidence, which is the trait of believing in one's abilities. It may influence a student's perseverance and success. Lecturers can assist students in developing self-confidence by designing classes that demonstrate how their own efforts will result in success [15]. According to Siregar and Nara (2014) [16], students' self-confidence can be increased by increasing their expectations to succeed by sharing more successful experiences.

- Reduce the amount of information that students must learn all at once by breaking it down into smaller chunks.
- Make encouraging remarks to the students in order to boost their self-esteem.

- Provide constructive feedback to students throughout the learning process so that they can assess their level of understanding and learning outcomes.

Positive reinforcement for personal achievements, as well as timely, pertinent feedback, are both effective ways to boost confidence. A person with self-confidence believes they would be able to complete a task and is more likely to believe the work is reasonable.

3. Results and Discussion

This section presents the research findings and discussion. This study comprises 107 students enrolled in the Self Development Skills course. The SPSS test was used to analyse the data for components of attention and confidence. Descriptive analysis was used to determine the level of attention and confidence of the students during the course of learning using gamified elements.

3.1. Attention

Table 1 indicates the questions used in this study to assess the participants' level of attention, and they were given a set of questionnaires. Table 1 shows the results of the filtered questions and the respondents who scored between 4 and 5. Students agreed that the game theme and features drew their attention and motivated them to learn more in order to complete the tasks. Furthermore, students stated that the instructor's use of gamification kept them engaged and motivated. Achievement badges also drew their attention and motivated them to learn more during the learning process.

Table 1. Attention (Responses scored 4 and 5).

No.	Question	Responses *n*= 107	Percentage (%)
1.	The course design (adventure theme) captures my attention in learning this course.	47	43.9
2.	The game feature motivates me to complete the tasks and lessons.	43	40.2
3.	The instructor motivates me and engages well with the students.	43	40.2
4.	The gamification feature motivates me to learn more	40	37.4
5.	The Badges of Achievement motivates me to learn more.	40	37.4

3.2. Overall level of attention

Table 2 indicates the overall attention level score. It indicates that approximately 74 students performed well, with an overall percentage of 69.2%. This finding supports the previous research that was found that gamified learning engages students, and it is a reliable predictor of learning success [17]. It also shows a link between learning outcomes and student attentiveness in game-based learning [18].

Table 2. Overall level of attention.

Scale	Frequency (*n*=107)	Percentage (%)	Mean	Standard Deviation
Low (Score 5-11)	3	2.8	2.66	0.531
Medium (Score 12-18)	30	28.0		
High (Score 19-25)	74	69.2		
Total	107	100		

3.3. Confidence

The questions used in this study to assess the level of confidence of the participants are shown in Table 3. The results displayed also included filtered questions and respondents who scored between 4 and 5. This demonstrates that the students' confidence level grows throughout the gamification learning process. The students agreed that they feel more confident about finishing the quiz and their assignments. Students also agreed that this course is beneficial to their self-development because they gain confidence in sharing ideas with their peers.

Table 3. Confidence (Responses scored 4 and 5).

No.	Question	Responses *n*= 107	Percentage (%)
1.	I am confident in working on my individual assignment.	41	48.3
2.	I am confident in working on my group assignment.	54	50.5
3.	I am confident to answer the quiz after learning the lesson.	38	35.5
4.	I am confident to give ideas, and opinions to my peers.	46	43
5.	I am confident that this course is beneficial for my self-development.	45	42.1

3.4. Overall level of confidence

The overall confidence level is presented in Table 4. It shows that approximately 70 students scored highly between the ages of 18 and 25, with an overall percentage of 65.4%. The ARCS model's confidence component, according to Malik [19], focuses on instilling in students a sense of optimism and success. This is because a student's level of confidence is highly correlated with their level of learning desire.

Table 4. Overall level of confidence.

Scale	Frequency (*n*=107)	Percentage (%)	Mean	Standard Deviation
Low (Score 5-11)	4	3.7	2.62	0.560
Medium (Score 12-18)	33	30.8		
High (Score 18-25)	70	65.4		
Total	107	100		

4. Conclusion

To summarize, this study looked at two (2) aspects of the ARCS motivational model: attention and confidence. The study's findings proved that gamification could keep students interested in learning, where the students gain confidence, and that they are motivated to work harder. According to our findings, strategic gamification management may influence how engagement is sustained and encouraged in gamified applications. This is because both attention and confidence are closely related and capable of developing students' learning competencies. It would also motivate and encourage the students to complete their tasks through the Badges as their rewards. Thus, academicians are encouraged to use gamification as one of their teaching methods as it evidently increases students' attention and interests in the learning process. Despite all the positive impacts, the implementation of gamification would be a challenge and affect the issue of digital divide among students from different institutions.

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