

Students' Perceptions of a Gamification in Higher Education

Dr. Alaa Khaled Nyazi

Educational Technology Department | College of Education | Taibah University | KSA

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* Corresponding author:
anyai@taibahu.edu.sa

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Abstract: The goal of the current study is to explore higher education students' perceptions at Taibah University in Saudi Arabia about integrating a gamification approach into their classes.

The descriptive technique was employed by the researcher since it was the most suitable scientific approach. An online survey with 35 questions was distributed to the students via email. The total number of students in the target population was 201. A total of 86 students submitted responses, resulting in a response rate of 43%. The Statistical Package for Social Sciences (SPSS) was used to analyze the data obtained and accomplish the study's objectives. The results showed positive perceptions toward the use of gamification among higher education students at Taibah University. The study also showed that there was a significant difference in integrating the gamification approach between students in the College of Law and the College of Business Administration in favor of Low college.

This study recommends encouraging the faculty members to adopt gamification methods in all their classes to help students easily recall the information and to help them get engaged with lesson. Further studies need to be conducted to investigate the relationship between students' personal characteristics (age, gender, and school year) and their perspectives about adopting a gamification approach. The findings of this study indicate that further studies at the colleges of Business Administration need to be conducted to get faculty members and students' perspectives about adopting a gamification approach.

Keywords: Gamification; students' perceptions; higher education; Taibah University.

تصورات طالبات المرحلة الجامعية حول استخدام منهج التلعيب في التعليم

د/ آلاء خالد نيازي

كلية التربية | جامعة طيبة | المملكة العربية السعودية

المستخلص: هدفت الدراسة إلى معرفة تصورات طالبات مرحلة البكالوريوس في جامعة طيبة في المملكة العربية السعودية حول دمج منهج التلعيب في التعليم، واستخدمت الباحثة المنهج الوصفي وتمثلت الأداة في استبانة مكونة من 35 سؤالاً؛ تم توزيعها على عينة بلغت (86) طالبة؛ ويمثلن نسبة 43% من مجتمع الدراسة، وتم استخدام الحزمة الإحصائية للعلوم الاجتماعية (SPSS)؛ أظهرت النتائج تصورات إيجابية تجاه استخدام التلعيب بين طلاب المرحلة الجامعية في جامعة طيبة وأن هناك فروق ذات دلالة إحصائية بين طلاب كلية القانون وكلية إدارة الأعمال لصالح كلية القانون، وأوصت الباحثة بتشجيع أعضاء هيئة التدريس في الجامعة إلى اعتماد استخدام طريقة دمج التلعيب في التعليم كي تساعد الطلاب على تذكر المعلومات بسهولة والتفاعل مع الدرس. كما اقترحت إجراء المزيد من الدراسات لمعرفة العلاقة بين الخصائص الشخصية للطلاب (العمر والجنس والسنة الدراسية) ووجهات نظرهم حول دمج منهج التلعيب في التعليم. أيضاً بينت نتائج هذه الدراسة إلى ضرورة إجراء المزيد من الدراسات في كلية إدارة الأعمال للحصول على وجهات نظر أعضاء هيئة التدريس والطلاب حول تبني منهج التلعيب في التعليم.

الكلمات المفتاحية: التلعيب، تصورات الطالبات، المرحلة الجامعية، جامعة طيبة.

1- Introduction.

Gamification approach is growing in popularity in higher education because it may help students, faculty members, and the learning environment as a whole in a number of ways. Student motivation is one of the main advantages of gamification strategies; when students are encouraged to participate in a game-like atmosphere, they are more likely to be involved in their studies and submit assignments on time. Additionally, as game settings encourage better classmate cooperation and communication than conventional lecture-style classrooms, gamification activities can increase student involvement. Additionally, faculty members who employ gamified settings may better prepare themselves by learning the principles of game design and how to use them in their lessons. In addition, playing games in class can stimulate pleasant relationships between students and faculty members, which can lead to an improvement in overall classroom conduct. Giving students rapid feedback and allowing them to earn badges for accomplishing new tasks are two benefits of incorporating gaming aspects into instructional approaches (Cheong, Filippou, & Cheong, 2014).

Gamification is a term used to describe a set of motivating triggers that are typically connected to games, such as rewards and competition. Gamification in education is still a relatively new trend, but its proponents contend that it may be used to improve student engagement and encourage learning (Buckley et al., 2017). Numerous recurring characteristics of gamified activities are noted in the literature. People are first rewarded for reaching milestones or overcoming challenges. Badges are used to openly show that a player has completed a specific game goal. Prizes have a similar role, but they give the player an incentive outside of the game. The second characteristic of gamified activities is quick feedback, which is greatly facilitated by leveling systems. Playing games is a process that involves learning through experience, practice, reflection, and success (Cheong, Filippou, & Cheong, 2014).

One important goal of gamification is to learn to embrace failure rather than forbid it. Failure is viewed as a step toward mastery rather than the end. Gamification methods aim to keep students' perceptions of failure positive by establishing quick feedback loops and lowering the barriers to entry for each learning episode. The explicit use of competition as a motivating factor is a fourth distinctive trait. Progress tracking, wherein progression toward an overarching aim is tracked by a sequence of intermediate milestones to be attained, can create competition at the individual level. It might also be social, with people vying with one another to get the highest score (Buckley et al., 2017). It can provide players with agency through interaction and potentially prepare them for future learning. It is a useful tool to improve engagement and motivation in a learning environment. Gamification can also support students' self-regulation by giving them the chance to evaluate their own performance, which creates clear standards and encourages student accountability (Gressick & Langston, 2017).

There are many studies investigated the application of gamification in higher education. Cheong et al. (2014) discovered that students highly valued systems that incorporate games. According to this study's findings, gamification increases students' social interaction, engagement, and appreciation of feedback. Alabbasi (2017) investigated graduate students' perspectives toward the use of gamification techniques in higher education. Her study showed a positive perception toward the use of gamification tools among graduate students. In addition, Gressick and Langston (2017) studied the higher education students' perceptions and discovered that students had a favorable opinion of the usage of gaming tools in the classroom. Students thought that playing games was engaging, fun, and helpful in helping them comprehend the lessons. In a study on higher education students' perceptions of gamification, Licorish et al. (2018) found that gamification increased the quality of student learning in the classroom, with the greatest impact noted on the dynamics of the classroom, engagement, and motivation for learning. Sulphery (2017) found that integrating gamification in higher education help students in many ways, such as providing a more engaging and motivating learning environment, helping students to develop 21st century skills such as problem-solving and critical thinking, reducing the need for qualified teachers, and making educational resources more accessible.

The extent to which educational gamification boosts students' perceived motivation to learn was examined by Chapman and Rich (2018). The study's findings revealed that 67.7% of participants thought the gamified course was more or much more motivating than a conventional course. In addition, the likelihood of students engaging in gamified learning activities was examined by Mese and Dursun (2019). They compared experimental gamified activities and control groups and found that there was no difference between the groups in terms of the community of inquiry model, academic achievement, or motivation. Qualitative information backs up these conclusions. The results suggest that learning took place in the experimental group through latent learning. Moreover, Tóth et al. (2019) studied 200 bachelor's students who took a 14-week optional course as part of the study. Data from the two required tests and the game-based learning platform quizzes were gathered every week. The basis for the analysis was the complete set of platform

quizzes and exam outcomes. Additionally, the exam results were examined based on the number of platform quizzes participants completed and a comparison of the outcomes of each question. The findings demonstrate that students who participated in more platform quizzes typically scored higher on exams. Additionally, they marked more right answers and fewer wrong ones. In summary, incorporating some form of game-based learning improves student performance and perceptions of learning.

Another study by Chiang (2020) examined college students' perceptions of the use of gamification in an EFL reading class. All of the participants had favorable opinions of the gamification approach's advantages and the classroom environment. In other words, the participants found the learning environment fun and game-like. Every benefit has a drawback, and for mobile-based learning to be fully utilized, students' cell phones must be fully charged when they arrive at class. The adequate time provided to answer each question is a crucial consideration when utilizing gamification testing tools. Wali et al. (2020) examined the efficiency of online game-based platforms for an IT course instruction and how it affected students' academic performance. The study's findings indicate that the participants' accomplishments and competency levels in the various course modules were positively impacted by the use of the game-based learning platform. The participants' progress could be influenced by the competition, rankings, and scores. According to cognitive learning theories, the addition of the game-based learning tool may have enhanced students' learning performance levels. The findings of this study indicate that gamification methods have a significant influence on students' final IT course grades. Aboalshamat et al. (2020) investigated the effects of gamification on antimicrobial resistance (AMR) knowledge among female adults in Saudi Arabia. The result of this study found that gamification can significantly improve AMR knowledge, with better retention than conventional lectures. Gamification can be a fun and engaging way to learn about AMR. They also found that Gamification can help to promote collaboration and teamwork, and can help to increase self-confidence and motivation.

According to Khalid and Zainuddin (2020), the majority of responses to the open-ended questions praised the gamified learning resources available online. The students were appreciative of how gamification in online learning materials could improve their social skills with teachers or other students. In terms of communication skills, the same outcome is also evident. As a result, the students learned concepts and information without any help from the instructors or with only minimal help, which made learning the topics more enjoyable and not boring and hence motivated them to learn. Furthermore, a study by Acosta-Medina et al. (2021) indicates that students favor gamification more than traditional teaching methods in their virtual learning environments. Gamification creates complete, engaging settings that speed up information learning and boost motivation. As a result, it is advised that educators and institutions of higher education immerse themselves more in the use of gamified digital tactics in their classrooms.

Problem Statements:

Gamification's use in education is becoming increasingly important as students do not seem to be as interested in conventional teaching methods as they once were (Cheong et al., 2014). According to numerous studies, students find gamification methods more engaging. Additionally, it has been discovered that gamification in education helps students acquire higher-level thinking and problem-solving abilities (Cheong et al., 2014). Understanding students' perceptions of integrating gamification in education encourages educational institutions to include a suitable activity that would aid in their learning process by changing their behavior (Alabbasi, 2017). Gamification approaches have been used in higher education courses to stimulate collaborative learning, inquiry, and discovery. For this purpose, this study is intended to investigate how higher education students in Saudi Arabia perceive the integration of gamification in their classes. The study will contribute to the literature by evaluating how well students believe gamification to be an educational strategy. Second, offering recommendations to other faculty members on how gamification might be effective to adopt into all their lessons. Finally, making use of the data to recommend future studies regarding integrating gamification in higher education.

Research Questions:

- 1- What are higher education students' perceptions about integrating gamification into their classes at Taibah University?
- 2- Are there differences in students' perceptions based on the college variable?

2- Methods.

Participants and Procedure:

The purpose of this study is to investigate the perception of higher education students about integrating gamification using quantitative method. The target population included higher education students at Taibah University who took E-Learning and Fundamentals of 2D Animation elective classes with the researcher ($n = 201$). Because the target population was small, non-probability/comprehensive sampling was used. Thus, all students were included in the study. The researcher integrated some game sites throughout the courses such as: Blooket, TinyTap, Quizizz, and Kahoot. After each course, the survey link was e-mailed to all students by the researcher. The survey was sent in the spring and fall of 2021. A follow-up email was sent one week after they received the questionnaire, and another reminder was sent two weeks after the questionnaire was received. Responses were submitted by 86 students. The response rate was 43%. See table 1 for participant demographic information related to college variable.

Demographic Information:

Table (1) Distribution of participants according to the College variable

College	Frequency	%
College of Arts and Humanities	19	22.1%
College of Medicine	6	7.0%
College of Computer Science	9	10.5%
College of Law	7	8.1%
College of Education	24	27.9%
College of Family Science	16	18.6%
College of Science	3	3.5%
College of Business Administration	2	2.3%

Instruments:

The researcher used the descriptive (survey) method as the most appropriate scientific method for the nature of the current study. To collect the data for this study, an online questionnaire with a total of 35 questions was sent to the students. The survey had two sections: the first section asked the students about their demographic information, including their college. The second section was adapted from Bicen and Kocakoyun's (2018) study, which asked students about their perceptions of using a gamification approach in their classes. Participants responded to the questions on a 5-point Likert-type scale (5-completely agree, 4-agree, 3-no opinion, 2-disagree, and 1-completely disagree); some of these questions are as follows: "A gamification method increases my interest in the lesson", "Gamification methods increase classroom competition", "Gamification methods enable me to learn difficult topics while having fun", "I force myself to learn when using gamification methods to improve group achievement", and "Creating a competitive environment increases my interest in the lesson."

Reliability and Validity:

The survey was given to a group of faculty members to check the items clarity, comprehensiveness, and relevance. The questionnaire was revised after receiving their critical feedback. The instrument has strong internal consistency, with coefficient reliabilities of 0.95. This exceeded the recommended value of 0.70 (Nunnally & Bernstein, 1994). This study also showed a high internal consistency with Cronbach's alphas higher than 0.96.

Data Analysis:

To achieve the aims of the study and analyze the collected data, the Statistical Package for Social Sciences, which is denoted by the abbreviation (SPSS) was used. Frequencies and percentages, the mean, standard deviation, and analysis of variance (ANOVA) were used to determine how significant each individual value is within a given data set, to determine the average of all of the values that are contained in a data collection, and to examine variations in group means in the sample.

3- Results and Discussion.

The finding of this study showed that students had positive perceptions of using gamification in higher education classes. This study indicated that gamification can boost student engagement, motivation, and academic achievement. The study also found that gamification can help students improve their understanding of complex subjects, set higher goals for themselves, and feel more motivated to learn. Additionally, students reported that they would be interested in using gamification techniques in other classes. These findings suggest that gamification is a promising strategy for improving student learning in higher education.

Higher Education Students' Perceptions:

To answer the first research question the higher education students' perceptions at Taibah University about integrating the gamification approach in their classes, iterations, percentages, mean, standard deviations, and ranks for the responses of the members of the participants have been calculated on the terms of the gamification approach. The results are as follow: the participants have high perspectives as higher education students at Taibah University about integrating gamification approaches in their classes, with an average of 3.97 from 5, an average that falls in the fourth category of the fifth scale category (from 3.40 to 4.20). It is clear from the results in Table (2) that the participants have high perspectives as higher education students at Taibah University about integrating gamification approaches in their classes on most features of gamification approaches, which were arranged in a descending order according to the approval of the participants as follows:

- 1- The item "Rewards associated with gamification motivate me" comes first in terms of approval from the participants, with an average of 4.36 out of 5.
- 2- The item "I feel bad if I am unsuccessful when a gamification method is applied" came last in terms of approval of the participants with an average of 3.04 out of 5.

The results revealed that students' perceptions of using gamification were positive. This finding is in line with previous studies reported by Cheong et al. (2014), Alabbasi (2017), Gressick and Langston (2017), Chapman and Rich (2018), and Toth et al. (2019), who found that using a gamification strategy in higher education classes boosted student engagement and motivated them to put in more effort in order to succeed. In line with Wali et al. (2020) findings, which indicate that competition in higher education classes increases student motivation and communication with the aim of increasing academic success, this study found that competition element in games helped students to be more responsive and engaged in their learning. The finding of this study also indicated that students believed gamification helped them understand complex subjects. It also increases student interest in the subject matter and motivates them to set higher goals for themselves. The result also showed that the students believed that implementing gamification techniques in all their higher education classes would be beneficial, and students reported feeling better after utilizing a gamification technique on their devices. Students improved themselves through gamification in areas where they felt lacking by keeping track of their achievement status, and the incentive system was believed to be motivational. This finding aligns with Buckley et al. (2017) study, which found that integrating gamification into the lesson helped students assess their own performance, create clear criteria, and encourage their accountability. The result also showed that using a gamification technique enhanced students' interest in the subject and their aspirations for academic achievement. Additionally, it was shown that using this strategy helped students become more motivated, which is in line with Alabbasi's (2017) study, which found that a beneficial impact on student motivation is also seen when gamification strategies are used. Students become more ambitious when gamification techniques are used in the classroom, which motivates them to work harder on their studies.

Table (2) Students' perceptions of gamification approach.

	N	Mean	Std. Deviation
College of Arts and Humanities	19	4.18	0.71
College of Medicine	6	3.40	0.42
College of Computer Science	9	3.77	0.75
College of Law	7	4.30	0.58
College of Education	24	4.06	0.43
College of Family Science	16	4.02	0.65

	N	Mean	Std. Deviation
College of Science	3	3.39	0.22
College of Business Administration	2	2.81	1.63
Total	86	3.97	0.66

Differences on the Students' Perceptions based on College:

In order to answer the second research question, which is: Are there differences in students' perceptions based on the college variable? Descriptive statistics of the gamification approach according to the college variable was conducted. Table 3 indicates that there are differences in the gamification approach related to the college variable. To check the significance of these differences, an ANOVA test has been done. The null hypothesis refers to the fact that there are no significant differences between students based on their colleges. The alternative hypothesis refers to the fact that there are significant differences between students based on their colleges. The results are presented in Table 3 below:

Table (3) ANOVA test for the gamification approach related to the college.

	Sum of Squares	df	Mean Square	F	Sig.	
Causes of Schedule & Cost Overrun	Between Groups	7.821	7	1.12	2.887	0.010
	Within Groups	30.191	78	0.39		
	Total	38.012	85			

The previous table indicates that the p-value of the test (0.010) was less than 0.05, so we can reject the null hypothesis and accept the alternative one, which refers to the fact that there are significant differences between students based on their colleges at the level of significance of 0.05. To check for significant differences the Scheffea test has been done, and the results are as follows:

Table (4) Scheffea test for significant differences

College	N	Subset for alpha = 0.05	
		1	2
College of Law	7		4.3080
College of Science	3	3.3955	3.3955
College of Medicine	6	3.4063	3.4063
College of Computer Science	9	3.7743	3.7743
College of Family Science	16	4.0230	4.0230
College of Education	24	4.0638	4.0638
College of Arts and Humanities	19	4.1805	4.1805
College of Business Administration	2	2.8120	2.8120
Sig.		0.071	0.533

Table No. (4) indicates that there was a significant difference in gamification approach between students that belongs to College of Law, and College of Business Administration.

For the second research question, which was intended to explore if there were any college differences in the students' perceptions of using the gamification approach, there was a significant difference in gamification approach between students that belongs to College of Law, and College of Business Administration. The findings showed that students of Law college are familiar with the use of gamification into their classes. This maybe because the faculty members of Law college integrated gamification into their classes and understood the effect of gamification for teaching and learning. However, students from Business Administration colleges were lowest positive about the use of gamification than students from other colleges which showed that the faculty at Business Administration college should consider integrating gamification approaches in their classes to help students learn in a fun and enjoyable way. Faculty members in Business Administration college need to understand how gamification strategies in higher education might offer a chance to inspire students in academic settings. Course information is made more interesting and pertinent for students by using gaming dynamics. Using game components like badges, leaderboards, and awards, educators may highlight significant curricular items and offer examples of how they might be gamified. While still letting students develop their own ideologies,

this structure encourages student participation. By incorporating gaming components into higher education, educators may develop distinctive learning experiences that support student motivation through group projects that make learning entertaining and rewarding. Additionally, by offering quick feedback on their development throughout the curriculum, gamification in education enables students to get important insight into their performance (Chapman & Rich, 2018). The competition among students in a gamified learning environment is one of its most attractive features. This competitive nature enables students to make connections with peers and develop their skills more effectively than before. Furthermore, competitions can be used to encourage collaboration among students, which helps create a better learning process. This creates an engaging environment for students to form connections between themselves, which can help them learn faster by making the process enjoyable and rewarding at the same time (Koppitsch & Meyer, 2022).

4- Conclusion.

The purpose of this study was to investigate higher education students' perceptions at Taibah University in Saudi Arabia about integrating a gamification approach into their classes. The findings of this study showed that students enjoyed the adoption of gamification into their classes and they claimed gamification could be applied to all areas which would help them to be more responsive and engaged in their learning. The result is inline with many studies conducted in Saudi Arabia and other countries. These studies have found that gamification can help to increase student engagement, motivation, and learning outcomes. The findings of this study also showed that there was a significant difference in gamification approach between students that belongs to College of Law, and College of Business Administration in favor of Low college. There are some limitations of this study as follows: The participants were all female students of Taibah University, and the results may not be generalizable to other populations. The data was collected using a self-report survey, which may have introduced bias. The study did not address other factors that could affect the results, such age and school year. For future practice, this study suggested adopting gamification in all higher education classes to help students easily recall the information. Faculty members need to adopt different game sites and applications. When adopting gamification learning systems into higher education courses, students would be able to become aware of their limitations and increase their motivation in the classroom, which would allow them to disclose themselves.

Recommendations for further study:

1. Further studies need to be conducted to investigate the best applications to use when adopting a gamification approach.
2. Further studies need to be conducted to investigate the relationship between students' personal characteristics (age, gender, and school year) and their perspectives about adopting a gamification approach.
3. Qualitative studies should be conducted to further expand the understanding of students' perspectives about adopting a gamification approach, their needs, and how to address them.
4. The findings of this study indicate that further studies at the college of Business Administration need to be conducted to get faculty members and students' perspectives about adopting a gamification approach.
5. The findings of this study indicate that further studies at Saudi universities need to be conducted to get students' perspectives about adopting a gamification approach.
6. Academics, instructional designers, and faculty members will all be affected differently by the process of gamification's integration into traditional education. It might be prudent to look into additional studies of these groups.

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