



## STUDENTS' COMMITMENT TO THE GRAPHICS AND VISUAL MEDIA COURSE BY GAMIFICATION ACTIVITIES

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### Abstract

Graphic and visual media is one of the compulsory courses that must be taken by students in the Department of Educational Technology. This course uses gamification strategies in its implementation. This study aims to determine the commitment of students in the Graphic and visual media course to gamification activities. The subjects of this study were students of the Department of Educational Technology, State University of Malang with a population of 122 respondents. The data collection technique in this study was by distributing organizational commitment questionnaires. This study used a descriptive quantitative method. The results of this study are the level of student commitment in gamification activities, student commitment based on gender, student commitment based on offerings, and student commitment based on the type of model chosen in product creation. From the results of the study, it can be concluded that students who have a high commitment to the graphic and visual media course engage in gamification activities more often than students with low commitment. When viewed overall, students tend to have affective commitment and normative commitment. Another finding of this study is that the commitment of female students is higher than the commitment of male students when viewed from the average figures, but there is no significant difference.

**Keyword:** organizational commitment; students; gamification

### 1. Introduction

Solving learning problems is the primary goal of educational technology, making learning activities more effective. "Educational technology is the study and ethical practice of facilitating learning and improving performance by creating, using, and managing appropriate technological processes and resources" (AECT, 2004) (Reeves & Oh, 2017). In its implementation, a strategy is needed so that learning can run optimally and produce satisfactory outcomes. A learning strategy is a method or technique used by educators with students to achieve a learning goal (Purba et al., 2022). Learning strategies are developed based on a specific approach. Therefore, knowledge of the characteristics of learners who will be active in the learning process is needed. Things that need to be considered in learner characteristics are students' abilities, both latent and real skills, and their personality, such as motivation, emotions, attitudes, and other personality aspects (Warsita, 2013). Currently, various learning strategies have been implemented to achieve learning goals, one of which is gamification.

The Graphic and Visual Media course is one of the courses in the Department of Educational Technology, State University of Malang that implements gamification strategies. This course can be taken by students in the first semester with a total of three credits. The purpose of this course is to provide students with knowledge to examine how to develop

learning with three-dimensional characters or attempt to express ideas, content, material to others in the form of three-dimensional animation using computer/digital technology. The Graphic and Visual Media course is a product-based course. The creation of three-dimensional animation products in this course begins in the middle of the first semester.

Students in the Department of Educational Technology who are taking graphic and visual media courses come from diverse backgrounds. Some students already possess skills in creating 3D products, which will facilitate or assist in the product development process. However, many still lack or lack basic skills in 3D product design, as most students come from high school or public schools and therefore do not receive design knowledge unless they are self-taught. All students also experienced the transition from online learning activities during school to offline learning during lectures. This change requires students to adapt again to carrying out learning activities while engaging in gamification activities.

One of the things needed to adapt when carrying out gamification activities is motivation. Motivation is the desire or drive a person has to make behavioral changes (Uno, 2007). Motivation is very important to have in order to achieve goals and form a positive attitude for each individual (Gottfried et al., 2007). Commitment is one of the motivations that comes from within a person. Commitment referred to here is where when an individual has a strong will, the individual will feel more responsible for their decisions. Therefore, adaptation or acceptance of the goals and values of the organization is necessary for someone to survive in an organization. This is in line with Allen Meyer's opinion that work as a collection of tasks and responsibilities will require individuals who have the skills and abilities to adapt to the demands of the situation (Meyer & Allen, 1997). In gamification activities in the Graphic and Visual Media course, students are given responsibility for decision-making in managing performance based on an agreement that each student has agreed to with the Graphic and Visual Media course supervisor.

### **Commitment Theory**

Commitment is a person's desire or willingness to remain in membership, identification with goals, loyalty of a member, and willingness to exert considerable effort to achieve organizational goals (Aydin et al., 2011). Commitment reflects an individual's willingness to work toward and accept organizational goals. Organizational commitment has been identified as a guideline for forms of satisfaction, organizational citizenship behavior, absenteeism and turnover, performance in the organization, perceived organizational support, productivity, job alternatives, and investment and obligation (Shagholi et al., 2011) In (Reichers, 1985) Porter et al. (1974) argued that commitment consists of (a) belief and acceptance of organizational goals and values, (b) willingness to exert effort towards achieving organizational goals, and (c) a strong desire to maintain organizational membership.

Commitment is a core description of a person's attitude towards an organization and is a strong indicator of a person's withdrawal tendencies and voluntary behavior in an organization (Ghosh & Swamy, 1979). According to (Mercurio, 2015) Commitment can be interpreted as an individual's psychological state towards an organization which is a consequence of the individual's actions. A committed person will make more effort to achieve tasks and targets, spend more time in the organization, and have a more positive relationship with the organization (Erdem & Ucar, 2013). Allen and Meyer (1990) identified three

components of commitment, namely, affective commitment, continuance commitment, and normative commitment (Meyer & Herscovitch, 2001).

Affective commitment refers to a person's emotional attachment and involvement in an organization. Someone with strong affective commitment will remain in an organization because they want to. This is a belief that accepts the goals and values of the organization, a willingness to exert effort within an organization to achieve goals, and an intention to remain a member of the organization. Continuance commitment refers to an individual's awareness of their future needs upon leaving the organization. Someone who has a need in the organization is based on a continuance commitment because they need to do so. Continuance commitment means that the individual feels they will face losses when leaving the organization. Meanwhile, normative commitment reflects a feeling of obligation to perform a task or job. Someone with a strong normative commitment will feel compelled to remain with the organization because of a sense of responsibility within the organization. (Meyer & Allen, 1997)

### **Gamification Theory**

According to Deterding et al., 2011, gamification is the integration of game elements and game thinking into non-game activities. The characteristics of games in learning activities with gamification strategies include the presence of challenges. This can be striking and engaging for users. Game-based learning primarily concerns the psychology of play, and this motivational strategy can be adopted with or without the aid of technology (Madigan, 2020). This is in accordance with Deterding's opinion in Baydas & Cicek (2019) that the purpose of gamification is to foster activeness, increase motivation, and improve user retention. Gamification seeks to empower users by introducing choices, creating opportunities, and encouraging critical and creative thinking, and they do this primarily through the integration of game mechanics (Alexander et al., 2019).

Gamification in the context of learning is the design process of adding game elements to transform existing learning processes (Landers et al., 2018). According to (Alessi & Trollip, 2000), the characteristics of games are: *goals, rules, players, equipment, directions, constraints, penalties, choices*. *Goals* is the goal or result that must be achieved by the player. *Rules* are the rules that players must follow. *Players* is a player in a game. *Equipment* is a device used to help players in a game. *Directions* is a direction or guide for players to understand the flow of the game. *Constraints* is an obstacle that players must overcome in the game. When players cheat or commit violations, players will receive a punishment or what is called *penalties*. Players will be given a choice of difficulty levels before playing or also known as *Choices*. From these characteristics, at least five characteristics are used to meet the criteria for a game (Soepriyanto & Kuswandi, 2021).

The main thing to encourage gamification in education is its stimulating elements, such as direct feedback, feelings of achievement, challenges and defeats (Kapp, 2012). In its implementation, gamification has several special features that play a key role in gamification for a learning approach in order to motivate users (Kapp, 2013). Features the features in question are *level, badge or badges, reward, point, leaderboard*, and narrative. Points are the value a learner earns after completing a challenge. Levels are the level of difficulty in terms of performance and product accuracy. Rewards are awards for learners who complete tasks according to the requirements. Learners who successfully complete a challenge will receive a badge as a sign of achievement. The status and number of points earned by learners will be

listed on the leaderboard. This will certainly encourage and motivate learners to compete in learning. Meanwhile, narrative is the underlying element of a game; with narrative, learners' emotions will be directed.

Based on the background presented, it is important to understand students' commitment to gamification activities to achieve learning objectives in the Graphic and Visual Media course. Furthermore, no research has examined student commitment to gamification activities. The purpose of this study is to determine students' commitment to gamification activities in the Graphic and Visual Media course.

## 2. Method

This research employed a descriptive quantitative method. In this study, the researcher employed a quantitative strategy, namely collecting data using a questionnaire. To gain in-depth understanding of the problems in the field, a quantitative descriptive method was employed. This quantitative descriptive method aims to describe the results of measuring research variables through numbers and words (Setyosari, 2013). This research began with data collection, data processing, data explanation or description, and discussion of the results.

The population or subjects in this study were students from the Department of Educational Technology, Class of 2022, State University of Malang, who were taking the Graphic and Visual Media course. Data collection was conducted by distributing a questionnaire on Organizational Commitment. The questionnaire was based on the three dimensions of organizational commitment formulated by Allen and Meyer: affective, normative, and continuance commitment. This questionnaire was developed using a statement item format regarding situations that indicate certain behaviors (Azwar, 1999). The questionnaire contained several statements.favorable And unfavorable.

The measuring instrument scale used in this study is the Likert scale. The Likert scale is used to determine the answer score consisting of 5 points, namely 1 for strongly disagree, 2 for disagree, 3 for less agree, 4 for agree, and 5 for strongly agree (Joshi et al., 2015). After obtaining the score, the next step taken by the researcher was to describe the data based on the categorization of the level of commitment of students who are taking the course, describing the data based on male and female gender, based on offerings, and based on the type of model chosen by students in making the product.

**Table 1. Likert scale**

Research Criteria	Strongly agree	Agree	Disagree Less	Don't agree	Strongly Disagree
Research Scale	5	4	3	2	1

## 3. Results and Discussion

### 3.1 Result

The data results obtained in this study were then processed and presented in tables. In accordance with descriptive statistical techniques, the data presented is a general explanation of the data obtained in the field.

**Tabel 2. Statistics**

TOTAL		
N	Valid	122
	Missing	0
Mean		80,8197
Median		80,0000
Mode		78,00
Std. Deviation		5,82246
Variance		33,910
Range		33,00
Minimum		67,00
Maximum		100,00

Based on the data in table 2, it can be seen that the number of respondents from the student commitment questionnaire for the graphic and visual media course was 122 respondents and the average obtained was average 80.8197 with a standard deviation of 5.82246. The minimum value is 67.00 and the maximum value is 100.00.

**Table 3. Commitment Categories**

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Low	54	44,3	44,3	44,3
High	68	54,4	54,4	100,0
Total	125	100,0	100,0	

Table 3 shows that 44.3% of students had low organizational commitment and 54.4% had high organizational commitment. It can be concluded that more students had high commitment than low commitment in taking the graphic and visual media course. The level of student commitment in this graphic and visual media course was calculated based on the median results of the questionnaire. The low category was seen as a score less than 80, and the high category was seen as a score greater than or equal to 80.

**Table 4. Commitment by Gender**

		N	Mean	Std. Deviation	Std. Error Mean
Total	Man	41	79,7073	5,46005	,85272
	Woman				

Woman	81	81,3827	5,95098	,66122
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In Table 4, it can be seen that the average commitment of male students is 79.7073 with a standard deviation of 5.46005 and the number of respondents is 41. Meanwhile, female students have an average of 81.3827 with a standard deviation of 5.95098 and the number of respondents is 81. Based on this, the commitment of male students is lower than the commitment of female students.

**Table 5. Commitments Based on Offering**

Offering	Statistic						
	Mean	Median	Variance	Maximum	Minimum	Range	Std. Deviation
Mark							
OFF A	81,4762	82	21,719	92	71	21	4,66
OFF B	80,9737	79,5	38,675	96	70	26	6,22
OFF C	80,0238	79,5	42,316	100	67	33	6,5

Table 5 shows the data on the results of student commitment based on offerings, namely offerings A, B, and C. From these data, it can be seen that OFF A has the highest average or mean value of 81.4762, then OFF B with a mean of 80.9737, and finally OFF C with a mean of 80.0238. The median or middle value for OFF A is 82, while the median for OFF B and OFF C has the same value of 79.5. The maximum and minimum values for the three offerings have differences. The maximum value for OFF A is 92 and the minimum value is 71, OFF B has a maximum value of 96 and a minimum value of 70, while OFF C has a maximum value of 100 and a minimum value of 67.

**Table 6. Commitment Based on Model Type**

Offering	N	Statistic					
		Mean	Median	Maximum	Minimum	Range	Std. Deviation
Mark							
SM	62	80,8710	80	100	70	30	5,96
CSM	58	80,7241	80	92	67	25	5,81
WM	2	82	82	82	82	0	0
CM	-	-	-	-	-	-	-

Table 6 shows data on student commitment results based on the model type chosen by the students. There are four models for creating three-dimensional products, namely: *Solid Model*, *Cross Section Model*, *Working Model*, And *Construction Model*. From the data, it can be seen that 62 students chose to make products with solid models and had a mean or average commitment of 80.8710. 58 students chose to make products with cross-section models with an average commitment of 80.7241. 2 students chose working models with an average commitment of 82. Meanwhile, for the construction model, no students chose to make products with that model. For students who chose solid models, the median score was 80, the maximum score was 100, and the minimum score was 70. Students who chose cross-section models had a median score of 80, the maximum score was 92, and the minimum score was 67.

Students who chose working models had the same median, maximum, and minimum scores, namely 82.

### 3.2 Discussion

In education, gamification aims to place students in scenarios or simulations that involve engaging challenges in a way that increases their level of commitment and competitiveness. The use of gamification strategies can increase participant motivation through the use of game mechanics and influence increased student participation, commitment, and loyalty, which can result in more proactive participants (Gené et al., 2014). Therefore, this study aims to determine one of the factors influenced by gamification, namely student commitment during gamification activities. In this study, there were 20 statements in the questionnaire responded to by educational technology students. The statements were made based on three aspects of organizational commitment: affective commitment, normative commitment, and continuance commitment. Where the indicators of affective commitment namely (1) The desire to become a member of the lecture; (2) Feeling involved in achieving the objectives of the lecture; (3) Emotional connection with the course; (4) Being proud of the course to others. Indicators of normative commitment include (1) Feeling guilty about leaving the lecture; (2) Staying in the lecture is an obligation; (3) Having a sense of responsibility towards the lecture. Indicators of ongoing commitment are (1) Hoping to gain benefits if staying; (2) Staying in the lecture is a necessity; (3) Considering leaving the lecture.

In the results of Table 3, among students with low commitment, students felt they had no emotional connection to the course, which is one indicator of affective commitment. Some students felt normal when their product work exceeded...*deadline* but still completed, thus lowering the level of commitment. The results of the presentation are supported by several students who agreed with the statement "I think I am not easily committed to other courses as I am committed to this course" and several students who disagreed with the statement "I feel that if I cannot understand the Graphic and Visual Media course, some course objectives will not be achieved." This is in line with research proving that low commitment indicates an inability to articulate goals and a lack of member commitment. A study proposed by (Lencioni, 2006) identified a lack of commitment as one of the important reasons for someone's failure. Students with low commitment also chose to agree with the statement "When I feel difficult, I think it's okay to complete the 3D product past the deadline, because the most important thing for me is to finish it even if the result is mediocre." This indicates that they took the course to fulfill obligations rather than achieve learning objectives. In addition, teams that showed low commitment showed a lack of cooperation with colleagues. On the other hand, research (Salleh et al., 2012) states that individuals at moderate levels of commitment also have a high intention to leave the organization due to dissatisfaction with the rewards received. Based on this, a gamification strategy is implemented using game elements to increase commitment and motivation and influence student behavior.

Meanwhile, in the high commitment category, individuals felt more able to accept the objectives of the course, as evidenced by the greater number of students who strongly agreed with the statement "As a course participant, I feel involved in achieving the objectives of the course" and felt compelled to understand the course and complete the project assignments that were required of them. Research (Thomas & Magana, 2022) stated that factors that contribute to high commitment include an effective understanding of objectives, encouraging

collaboration, providing feedback, focusing on communication and work quality, and creating room for improvement. This statement aligns with the gamification activities implemented in graphic and visual media courses, namely the presence of an assistance system that will trigger commitment and motivation. Research (Katzenbach & Smith, 2015) proposed that commitment can only be achieved when goals are well-defined. The game-based approach leads to higher levels of user commitment and motivation towards the activities and processes in which they are involved (Ružić & Dumančić, 2015). On the other hand, among students with high commitment, they felt more responsible for completing their 3D products according to the agreed contract. This is supported by several students who chose to strongly agree and agree with the statement "I feel I have to complete my Graphic and Visual Media project assignment according to the requirements." *deadline* in the contract I made" Another finding from this study is that there is no prominent aspect of commitment in the low commitment category. Meanwhile, in the high commitment category, students tend to have normative commitment. However, when viewed as a whole, students tend to have affective commitment and normative commitment. This finding differs from research (Mahembe & Engelbrecht, 2013) which argues that individuals who show low commitment show normative commitment, meaning they view work or tasks as requirements or obligations. In contrast, individuals who demonstrate high commitment demonstrate affective commitment, meaning that the individual is intrinsically and emotionally attached to the organization.

Next, Table 4 discusses student commitment to gamification activities based on gender. The results of the average commitment of men was 79.4048, while the average commitment of women was 81.1048. Based on these data, it can be seen that the average commitment of male students was less than that of female students, but not significantly different. Research (Toda et al., 2019) stated that the application of gamification in educational scenarios from the perspective of user gender. For the female sample, the most interesting elements were related to levels, badges, and information. Meanwhile, the most interesting rules for the male sample were related to levels, renovations, and choices. The graphic and visual media course also implemented gamification elements including levels, badges, rules, rewards, and points. The gamification elements applied in this course were appropriate for both women and men. However, the elements used tended to be more appealing to women. Therefore, the average commitment of female students was slightly greater than that of male students. Other research also shows that if psychological needs are met, students will become intrinsically motivated (Behzadnia & FatahModares, 2020). Therefore, although women's commitment is slightly higher than men's, this does not necessarily mean men's commitment is lower, as a person's commitment is influenced by psychological factors.

Table 5 discusses student commitment based on offerings or classes. The table shows that OFF A has an average score of 81.4762. OFF B has an average score of 80.9737. Meanwhile, OFF C has an average commitment score of 80.0238. Of the three offerings, OFF A has the highest score, and OFF C has the lowest. However, the average commitment scores for the three offerings are not significantly different. This means that all three offerings share the same commitment to participating in graphic and visual media courses with gamification activities. Gamification in the classroom contributes to increasing student commitment to succeed in solving challenges (Rojas-López et al., 2019). The classroom is certainly a battlefield where peers collaborate and compete with each other. Research (Sanchez et al., 2017) also revealed that this idea can foster student commitment. Students will decide to complete their

assignments or they will be behind others in points. Therefore, the point element in gamification can encourage students' commitment in completing three-dimensional products.

Next, this presentation will discuss the results from Table 6, namely student commitment based on model type. From these results, it can be seen that SM and CSM have more interest than WM and CM. This is because students already know that making a model requires a certain amount of effort. Working Model And Construction Model higher complexity level than Solid Model And Cross Section Model. However, the average scores of the three selected models were not much different, with students who chose the solid model having an average commitment score of 80.8710. Students who chose the cross-section model had an average commitment score of 80.7241. Students who chose the working model had an average commitment score of

Individuals who understand the goals and consequences of decision-making will be able to manage their commitments. Research (Vogel & Human-Vogel, 2016) suggests that academic success is a result of how students manage their academic commitments, which ultimately influences their investment and engagement. Students must have goals that align with their academic decisions. In this regard, creating an optimal cooperative work environment through the implementation of gamification strategies and high student commitment to achieving learning goals is highly relevant (López-Belmonte et al., 2020).

#### 4. Conclusion

Students with a high commitment to graphic and visual media courses will naturally have a goal aligned with their desire to learn how to create three-dimensional products for learning activities. Based on the results obtained from the descriptive quantitative study, 54 students were found to have low commitment and 68 students with high commitment. However, no aspect of commitment was particularly prominent among the low-commitment students. Meanwhile, students with high commitment tended to have normative commitment. However, when viewed overall, students tended to have affective and normative commitment.

Furthermore, the results of commitment between men and women were not significantly different, as a result of the implementation of a gamification strategy with elements appropriate for all genders. Furthermore, the results of commitment for each offering were also similar, proving that the implementation of gamification can trigger individuals' unwillingness to be left behind, thereby increasing student motivation. The results of student commitment based on their own model demonstrate that individuals already understand their goals in creating three-dimensional products, thus demonstrating similar levels of commitment.

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