

Effectiveness of Gamification towards Learners' Academic Performance

Authors' Names: Alidas, Clarice; Badol, Roda; Balawag, Merolle; Bulanit, Analy; Tay-eo, Mariel

Course Facilitator: AiZa Bheal M. Kitani

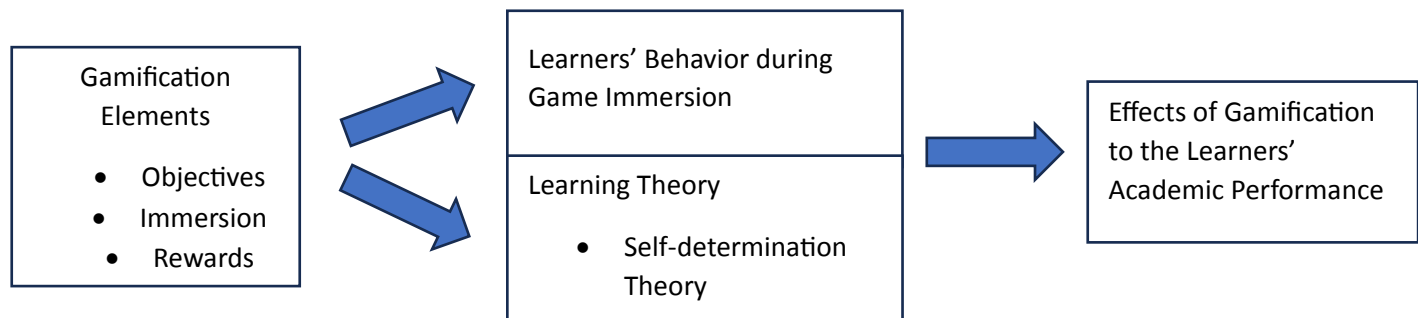
DOI: 10.47760/cognizance.2023.v03i12.002

I. Introduction

Gamification motivates and engages learners in a classroom setting by utilizing game features such as scoring, competition, and accomplishing learning goals. It captures students' interests, makes studying more enjoyable, and boosts academic performance. Gamification can be defined as the inclusion of game-like features in the learning process, including badges, points, and incentives, in order to encourage learners to accomplish activities and meet learning objectives. It can also be integrated, which means incorporating game-like components into the learning process, such as converting a lesson into a game or applying game mechanics to teach a topic. Gamification is the process of turning everyday tasks and environments into games that require creativity, teamwork, and play. Learners are more likely to engage in rewarded activities (Skinner, 1957). They are more motivated when they feel in control of their actions. Learners learn best when they actively engage with the content to develop their own knowledge (Piaget, 1896–1980). Gamification, according to the Smithsonian Science Education Center, not only improves student involvement but also cognitive and physical growth. Brain games can increase the rate at which the brain processes and retains knowledge while also getting learners active. A game's physical features bring significant long-term benefits.

II. Conceptual Framework

This framework presents the implementation of gamification as an aid to teaching, with the occurrence of corresponding factors that affects the game immersion, leading to potential benefits to the learners.



1. Gamification Elements

Gamification is the use of game elements with the purpose of enhancing motivation through pupils' participation. In a classroom setting, the frequent highlights are the game's objectives, the way it was implemented and the consequences of their actions for which in the elementary level, rewards were highly encouraged to boost pupils' engagement.

1.1. Objectives

The goal of the game will clarify what the players are trying to achieve at the end of the activity. Thus, it must be tied to the given mechanics. It is important for teachers to clarify the objectives to avoid conflict during the game. Hence, game objectives should be reflective with the given lesson objectives so that the learners will decipher the connection of the game to the lesson.

1.2. Immersion

The game immersion lies upon the teachers' strategy in implementing the game. Importantly, games should start by explaining the rules and mechanics. Abby Slutsky discusses in her journal that rules are significant as it reinforces proper discipline when they were redirected to positive attitudes they must instill during the game. The learners will thereby develop heart to leadership, sense of cooperation and an embodied spirit.

1.3. Rewards

Rewards are highly encouraged by giving points, badges, or physical rewards like chocolates and/or school supplies. According to Adrian Galvan from the University of California, Los Angeles in his research about brain functions, it was discovered that students' reward seeking behavior is highly correlated with a hyper-responsive dopamine system, which means that the more desired rewards are given, the better performance students can accomplish. This make the learners become highly responsive to the reward and will be motivated to reach a higher level of academic performance.

2. Learners' Behavior during Game Immersion

The learners' behaviors or attitudes during the game were examined to determine the possible factors that make the game. Further, the player's personality during the game would reflect his/her set of characteristics and psychological behaviors. Certain factors might be used by the teacher to understand how the learners think and socialize with others. According to Codish and Ravid (2014), personality traits refer to one's reaction to varied situations, thus show how an individual would engage on the different elements of gamification like when rewards were given to the winners of the game.

3. Learning Theory

In lieu of the success of gamification, learning theory must be greatly considered to ensure that the games implemented would be meaningful among the learners. Thus, it provides a view on how games serve as an educational tool during instruction.

3.1. Self-Determination Theory

SDT or Self-Determination Theory was backboned by the three basic psychological needs namely autonomy, competence and relatedness which underlie growth and development. Hence, such factors are also known as motivational behaviors. These behaviors were driven when teachers provide rewards, punishments, as well as internal pressures from the people around them. In lieu of this is the Social Learning Theory by Lev Vygotsky which reflects the importance of assistance to the learners known as scaffolding. Herein, learners were given a necessary amount of assistance by the MKOs or the 'More Knowledgeable Others' in the person of their parents, teachers and peers. Further, based on the self-determination theory, there are three identified basic properties: sense of accomplishment without depending on others, sense of competence in the tasks, and sense of relatability or connection with others. Importantly, learners were encouraged to learn intrinsically and not put their focus on external rewards.

4. Effects of Gamification to the Learners' Academic Performance

In the experimental research conducted by Coelho *et. al.* (2020) among the 40 undergraduate students of first-year courses on programming, divided into two groups – gamified and non-gamified, it was found out that participants who used the gamified environment acquired a higher average of points, and badges than the non-gamified group. Thus, gamified group participants have obtained accuracy and showed a decrease on any unwanted behaviors. Even so, the introverted participants in the gamified environment gained a higher number of points and medals. In conclusion, the results of the research showed that there is a significant change in behavior of the gamified group performing a notable progress with their improved personality traits and motivation to strive further. This was shown by introvert students who become more engaged in the use of a gamified version.

III. Methodology

This study utilizes qualitative research as it allows the capacity to gain a deeper understanding of the utilization of gamification in instruction among selected elementary teachers. Specifically, a phenomenological approach was adopted in the qualitative study, in which the researchers identified the respondent's uttered experiences. Phenomenological was selected in this study because we look to gather information that explains how individuals experience the phenomenon and how they feel about it through conducting an interview. The researchers desire to know the gamification elements that the teachers used, learner's behavior during game immersion and its effect on their academic performance.

Moreover, the respondents to the study are the elementary teachers from different schools consisting of twenty-five teachers in total. In particular, there are seven teachers from Bagnen Elementary School in Bauko, Mountain Province, five from Loacan Elementary School, six from Immaculate Heart of Mary School and seven from Pila Elementary School.



IV. Results and Discussion

Each participant's unique narrative is a result of our data analysis which was collected and classified through Thematic Analysis. The teachers' narratives offer insights into various aspects of their individual gamification implementation experiences. Hence, gamification was perceived as a part of motivational activity without the use of technological aid or devices. The respondents defined gamification as a method that uses game mechanics and rules to increase students' engagement in the lesson. The games were designed primarily for vocabulary building and learning assessment which include pass-the-box, scrabble, ring-a-bell, scavenger hunt, speed writing, and quiz bee.

The purpose of the lesson, the students' motivation, their preparedness, and the relationship between the game and the lesson were all considered when gamifications were put into practice. For them, gamification is a very effective strategy. The major benefit is it makes the lesson engaging and appealing because the pupils become involved and energized in the activity, tickling their eagerness to participate in it again. However, factors leading to drawbacks can possibly occur to gamification, such as the time commitment involved in gathering all the resources needed for a single activity. The reflected experiences of the teachers in game utilization also demonstrates that teachers evaluate students' performance using criteria and rubrics. The student performances and feedback are used to gauge how well gamification is working in the classroom. The teachers also offered a few suggestions on how to make gamifications better, including rewarding both the winning and losing teams, giving out prizes consistently, and providing a variety of activities.

The shared experiences reflect the teacher's concepts and understanding of gamification. Every educator in this research expressed a generally positive opinion on the use of gamification in the classroom, listed its benefits and drawbacks, and expressed support for its use in instructional settings. "Knowing the significance of gamification in learning, involves knowing under which situations game elements may motivate learning behaviour," wrote Lee, J. J., & Hammer, J. in response to these encouraging comments from the teachers. (2011). Several gamification activities can provide such details. Instead of traditional grades, students receive "points" for completing assignments (Laster, J., 2010). The teachers stressed that student participation and excellent performance are key components of gamification success. Despite this uncertainty, gamification has the following benefits for the learning process (Gamification In eLearning, 2017): A more effective learning experience arises from combining "fun" with learning while playing the game. A carefully considered gamification strategy will raise participant participation, feedback, and retention as engagement increases.



References

1. Chen, Z. (2023). *The Influence of School's Reward Systems on Students' Development*. Journal of Education Humanities and Social Sciences. doi:https://www.researchgate.net/publication/368383934_The_Influence_of_School's_Reward_Systems_on_Students'_Development#:~:text=They%20can%20attract%20students'%20interests,punishment%2C%20and%20decreasing%20intrinsic%20motivation.
2. Rawi, N. (2018). *A Conceptual Framework for Gamified Learning Management System for LINUS Students*. Indonesian Journal of Electrical Engineering and Computer Science. Vol. 12, No. 3. doi: https://www.researchgate.net/publication/330039000_A_Conceptual_Framework_for_Gamified_Learning_Management_System_for_LINUS_Students/link/5c7c428092851c6950520e55/download
3. Coelho, J. et. al. (2020). *The impact of gamification on students' learning, engagement, and behavior based on their personality traits*. doi: [file:///C:/Users/mobil/Downloads/s40561-019-0098-x%20\(3\).pdf](file:///C:/Users/mobil/Downloads/s40561-019-0098-x%20(3).pdf)
4. <https://classroom.synonym.com/classroom-games-teaching-rules-5997815.html>