

## The Use of Gamification Model for Homeroom Teachers in Conducting Learning Assessment (Qualitative Study)

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### Abstract:

Gamification is a game element but is included in non-game contexts because it is an effective motivational tool. The performance performed by using gamification becomes more attractive to users. The focus of the problem is determined by the researcher based on the field of education, with the object of research being a homeroom teacher. Education standards are at the level all stakeholders require, especially learning assessment. The urgency of students who are entitled to an evaluation from the teacher and easily known by the school and forwarded to parents. The approach taken with a qualitative study provides a more detailed explanation to homeroom teachers about problem solutions to place gamification in student learning assessments. Data were collected based on experiments with several homeroom teachers feeling and exploring media. The finding of homeroom responses which are very satisfied with gamification encourages entering students' grades in a fun way. From the study results, it can be concluded that the application of gamification strategies in which homeroom teachers conduct learning assessments triggers interest in fun characters, overcomes boredom with challenges and competition, gains new knowledge, and improves thinking skills to strengthen social interaction.

**Keywords:** Assessment, Gamification, Learning

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DOI: <http://dx.doi.org/10.20961/ijie.v6i1.61553>

## Introduction

Information technology penetrated the world of education and has the impact of providing added value in the learning process. This relates to the increasing need for information on science and technology, not all of which are obtained in the school environment (Bariah., 2019). Teachers need to create models or an effective way to learn and assist students in understanding the development of related courses (Prameswari & Budiyanto, 2017). An essential function for educators in evaluating student learning is to provide feedback to students in considering the effectiveness and efficiency of the learning process (Wahidmurni, Mustikawan, & Ridho., 2010). Student learning assessment is defined as various procedures to obtain student learning information and determine decisions related to student performance or learning outcomes (Miller, Linn, & Gronlund., 2012). Petency achievement or student learning outcomes during the learning process. Assessment of learning outcomes is an activity of standardizing student learning outcomes which is carried out through two main activities, namely assessment activities which are interpreted as collecting learning outcomes and evaluation as standardizing activities or processing learning outcomes (Asrifah et al., 2022).

Therefore, in learning in schools, skills assessment is important to carry out. Skills assessment is an assessment carried out to measure the level of achievement of imitation, the competence of students' skills, such as the ability to manipulate, articulation, precision and naturalization (Kunandar., 2013). The advantages of skill assessment are that it motivates students to show their maximum abilities, can directly observe students' skills and prove what students have learned in application. While the drawback is that it is difficult to do with a large number of students, requires accuracy in assessing performance and teacher professionalism is highly emphasized because observing / assessing various skills (Kurniasari & Adri., 2022). Disruptive technology negatively impacts learning institutions is not so much shown in general closely related to specific professions (Ishaq., 2021). The types of skills assessment in the 2013 curriculum include project, performance, and portfolio assessments.

The previous study involved 183 participants, all of whom had student status. Descriptive analysis of these results obtained that 60% more participants like games and 90% more participants are interested in participating in learning mathematics with the gamification model (Rahardja et al., 2019). The study obtained the view that someone likes games because they are fun, have the effect of eliminating boredom, right for developing thinking skills, socializing, facing challenges, a means of sharing new knowledge, competing and recognizing what can't be done. Someone dislikes games or even hates them because they feel they are just wasting time, get bored easily, provoke or fear addiction and are not interested in certain games. Using technology can save time and cost of implementing learning evaluations (Saputra et al., 2017). Lack of instructional media typing speed appropriate to the circumstances in the classroom (Widodo et al., 2017). Based on the problems described previously, qualitative research needs to be done to find out which learning media is usually more interesting by adding gamification elements.

## Literature Gamification Model

The implementation of gamification has basic game elements that are used to increase the success rate of activities with greater intensity of goals achieved (Rosyd et al., 2021). Earnings of engagement levels increase from the basic elements of the game which are described in the following figure 1:



Figure 1. Element of gamification

### a. Badges

Achievement badges can be used to influence student behavior even though the badge has no impact on the assessment (Aini, Q et al., 2018). Regarding the application of gamification in education. Most of the mixed/suggestive evaluation points miss critical motivational elements in the application of

gamification, sensitivity of results to small changes in implementation, requirements for ongoing monetary and time investment the need for strong teaching staff capable of designing effective assignments, assessing teachers work relatively quickly, and interacting with teachers closely suggests that educational badge should consider the abilities and motivations in an education management information system learning assessment (Firdaus & Faisal, 2021).

b. Levels

Levels indicate the user's skills and progress as well as the player's position in the game (Firdaus & Faisal, 2021). Like playing games, getting points, learning assessments are designed by having to pass each level, if you can't pass that level, you can't go to the next level and in the end you will get a winning trophy (Zulfikar & Unggul, 2022).

c. Leaderboards

Based on the points and badges received, users are ranked on a leaderboard that reflects their performance compared to other users (Rahardja et al., 2019). The progress bar provides a graphical representation based on a percentage of the player's progress.

d. Progress bar

The progress bar shows the trace line the teacher has made (Alonso et al., 2017). This achievement is suppressed and increased according to the use of a good education management information system (EMIS).

e. Virtual currency

Virtual currency is used to purchase (virtual) items (Aini et al., 2020). The addition of the virtual currency feature makes the teacher's point clearly visible (Dillenbourg et al., (2002). The issue of whether virtual currency can be converted into a tangible form, will be studied further with the ongoing process.

f. Awards and gifts

Giving awards and gifts to teachers who have completed the tasks performed on the system. Teachers who input student assessments with more effort will be rewarded.

g. Challenge between users

Competition between teachers adds to the enthusiasm between colleagues. By showing the best effort among teachers, it will increase the spirit of competition to be better and healthier.

## Review on Related Study

Based on previous research that has reviewed EMIS, the development of the use of gamification elements is currently needed, especially in learning which involves the teacher's process of entering student grades. The research list can be seen in table 1.

Table 1. Previous gamification research

Author	Field of Study	Method	Study Result
Hasri, S., Basori, B., & Maryono, D. (2019).	The purpose of this study was to determine whether Kahoot-based game-based learning models can influence learning interest and learning outcomes of participants being educated.	quasi-experimental method (quasi experimental design) with pretest- posttest control design	The results showed interest in the control class decreased 6.6% and learning outcomes increased by 2.8%. The results of the experimental class study showed interest in learning increased by 6.7% and learning outcomes increased by 9.9%. there are differences & improvements with the use of Kahoot.

<i>Widodo, Y., Yuana, R., &amp; Maryono, D. (2017).</i>	This research aims to design and create media applications that will be used to train the speed and accuracy of typing in the classroom. Lack of instructional media typing speed appropriate to the circumstances in the classroom was the background of this research.	Object research method is a research activity that aims to obtain data by collecting and recording and then analyzing the data that is done systema-tically based on knowledge.	Implementation of the user level is intended to secure the data from unauthorized third parties so that only students and teachers can see the results of learning. Furthermore, the application also gives teachers the opportunity to participate in learning, a way to create and change the questions used for the exercise.
<i>Nugroho, W. A., &amp; Rini, D. P. (2021)</i>	Gamification and Massive Open Online Course (MOOC) is a new phenomenon in open learning and is known as a good strategy to improve the quality of education.	Literature study approach	The result is that the MOOC does not require the full level of completion of traditional courses which is usually considered a success. In addition, gamification can increase the effectiveness of MOOC to be able to overcome the main problems in its application through the use of important elements in gamification.

### Literature Education Management Information System

Utilization of technology in educational institutions, that is, a school that is currently required to be able use and develop information and communication technology, the other is the Management Information System (MIS) (Haq, 2022). According to (Ramantoko et al., 2018) the system is a set of interconnected components that functions to collect, process, store, and distribute information to support creation decisions and oversight in organization. While the system definition information according to (Al Bahra., 2012) is a system within an organization that brings together transaction processing needs, support operations, managerial and strategic activities of an organization and provide certain outside parties with the required reports. According to Davis (2013) management information systems is a human or machine system integrated to provide information to support operations, management, and functions decision making in an organization.

Research presented by Yeh (2005) with the opinion that proposed application of information systems management in the field of learning and strategies to improve the quality of performance is something that can help institutions in the face of competition and seeking excellence. Where is the condition currently with high development information technology, to be one of the driving factors for system implementation management information in an institution (Haq, 2022).

### Research Method

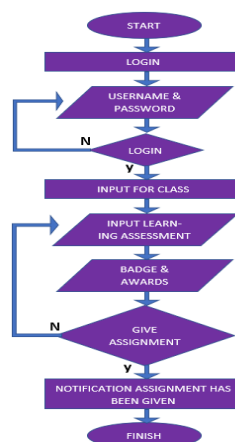


Figure 2. Flowchart of gamification design

The research method used is qualitative study (Pérez-López, & Rivera-García, 2017). Qualitative methods, such as in-depth interviews and focus group discussions, are used to answer questions about experiences, meanings and perspectives, most often from the home teacher's perspective (Hammarberg et al., 2016). Qualitative studies using homeroom teachers' emotional development notes and semi-structured interviews have been conducted with previously experienced participants who have fully experienced the effects of using gamification (Barratt, 2017).

Analysis of problems in the assessment of learning that occurs in homeroom teachers is solved in a flowchart figure 2. The figure 2 describes the flow of the process that occurs in homeroom teachers using gamification in learning assessment. The steps to be taken are described as follows in table 2.

Table 2. Process flow

No	Process	Description
1	Start	Display the initial screen when the teacher accesses the system.
2	Login, Username and password	To be able to access the system, the teacher must first enter the data.
3	Process login	When the data is correct then it's successful to proceed to the next stage, but if not then return to the previous stage.
4	Input for class and learning assessment	A complex process carried out by the teacher to be known by the school and students.
5	Badges and awards	Teachers who have completed the input will be given awards.
6	Give assignments	Teacher tasks that must be completed in the system
7	Notification assignments have been given and finish	When assignments all done, a notification will appear but if it is not finished it will return to the input process

## Result and Analysis

The results of developing gamification in EMIS show a tested prototype for a teacher to feel and explore. With a page that displays a visual display of the overall learning assessment that has been carried out in Figure 3. The data is in the form of a bar chart by conditioning several different inputs seen from different lengths of bars.

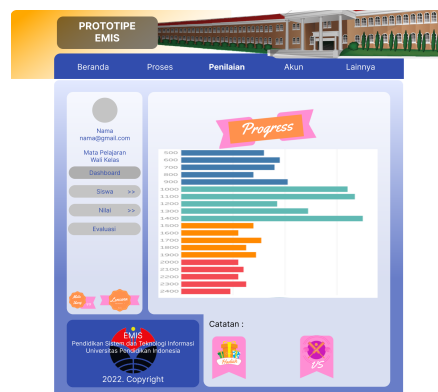


Figure 3. EMIS prototype dashboard

The teacher looks at the student's completeness data as a reference for inputting grades as shown in Figure 4. The list of students listed in the table contains the national student registration number, the student's full name, the gender of each student, which has two choices, namely male and female, and most importantly data regarding place and date of birth.

The main process in EMIS is entering student grades. The teacher's assessment is based on observations of student learning outcomes. With a more detailed division of values can make the averages between students vary. Measured into the value of practical knowledge and attitudes that can be seen in the figure 5.

The teacher completes the work of inputting student learning scores accompanied by gamification. The addition of gamification to further stimulate the motivation and enthusiasm of teachers in a fun way. The teacher inputs the values of each student directed at a lot of data. The data is contained in the class value

list table. So that the method used by the teacher so that he does not feel burdened and proceeds well and is comfortable using gamification media.



Figure 4. Student list



Figure 5. Student grade input process

## Result

Homeroom teachers are expected to have enthusiasm in carrying out learning, usually with the help of gamification. Findings from homeroom responses who are very satisfied with gamification provide encouragement in entering student grades in a fun way. With the stages of gathering information extracted from research and development. Qualitative analysis was conducted to find out detailed information from EMIS users. Teachers who piloted the system had a strong analysis of the interest, challenges, competition, knowledge, thinking skills, and interaction from input students data and assessment.

Figure 6 shows the results of the known analysis based on product design. Making prototypes that are tested for a more tangible improvement stage. Based on figure 6, the results of the homeroom teacher's work who input the students data and assessment section obtained results that can be seen in table 3.

## Analysis

Based on the results that have been obtained from the product design, the analysis of capabilities in the validation got satisfactory results. Teachers who try do not experience significant difficulties. The use of gamification received a positive response. Learning assessment is more enjoyable by staying focused on the mandatory aspects of the curriculum.

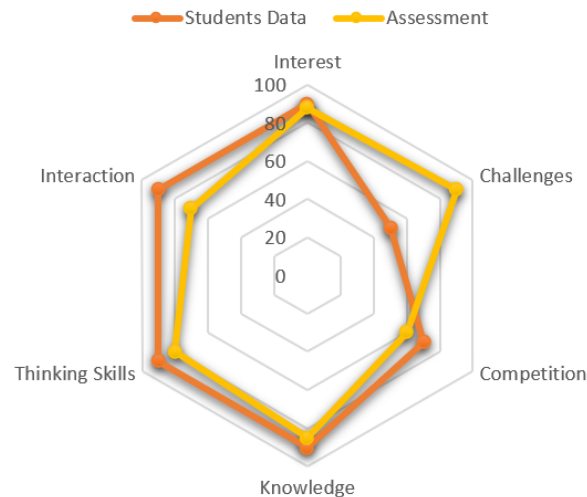


Figure 6. Qualitative analysis results

Table 3. Result of analysis product design

Factor	Analysis product design	
	Students data	Assessment
Interest	80%	80%
Challenges	40%	80%
Competition	60%	50%
Knowledge	80%	80%
Thinking skills	80%	70%
Interaction	80%	60%

## Conclusion

From the results of the study, it can be concluded that the application of gamification strategies to homeroom teachers who conduct learning assessments triggers interest in fun characters, overcomes boredom with challenges and competition, gains new knowledge, and improves thinking skills to strengthen social interactions. The use of the system from the beginning, login, username and password, login process Input class and learning assessments, badges and awards, assignment assignments, task notifications have been given and completed. The results of the analysis obtained from the product process work carried out showed satisfactory results. The analysis is based on student data with a comparison of the assessments entered by the homeroom teacher in order to obtain an efficient assessment. The data of the students obtained the results of high interest, attraction, thinking skills and knowledge compared to the competition and challenges factors. while the assessment that became the evaluation in the assessment obtained good results in the factors of knowledge, thinking skills, challenges and interest of homeroom teachers. But not too decreased in interaction and competition factors for homeroom teachers who use gamification media.

## Acknowledgement

Research carried out to the stage of product design validation by a teacher who became the target of testing and improvement. Hope for further research to complete it to mass production so that it can achieve prosperity in education.

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