



GAMIFICATION IN HISTORY LEARNING AS AN EFFORT TO ANSWER THE CHALLENGES IN FACING INDUSTRIAL REVOLUTION 4.0

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Abstract : The background of this research is that there are still many histories teachers who have not been able to adjust themselves to the existence of the industrial revolution 4.0, such as not being creative in the use of learning methods and media in history learning. No doubt, in this era, there a lot of students who like games, whether it is based on android applications or websites. This kind of condition should be used by the history teachers by bringing the game into learning, so that history learning is more interesting and different than usual. The purpose of this research is to describe the use of gamification in history learning. Gamification in learning means, applying the working principle to the game into the learning process with the aim to foster curiosity and student learning activities. Applications that can be utilized include: Kahoot, Socrative, class dojo, class badges, class craft, ribbon hero, and others. Gamification requires these elements: point features, badges, levels, leaderboards, challenges, rewards, on boarding, and engagement loops. The steps of using it are started by making learning goals, creating a game scenario, designing learning activities, creating groups, and applying the dynamics of the game. The benefits that can be obtained by using gamification are encouraging students' enthusiasm, increasing curiosity, influencing attitudes, creating innovation, building skills, and acquiring knowledge.

Keywords : industrial revolution 4.0, gamification, history learning innovation

I. INTRODUCTION

The background of this research is that there are still many history teachers who have not been able to adjust themselves to the existence of the industrial revolution 4.0, such as not being creative in the use of learning methods and media in history learning. The effect of this is to create the impression of learning history for students to be monotonous, rigid, and there are no challenges in students to take maximum learning activities. In the industrial revolution 4.0, it requires innovative learning systems such as improving students' abilities in the fields of Information Technology (IT), Operational Technology (OT), Internet of Things (IoT), and Big Data Analytics. This is done in order to create competitive and skilled students especially in the aspect of data literacy, technological literacy and human literacy.

The creativity of history teachers in the use of learning methods and media in the classroom is that they do not want to get out of their comfort zones so they cannot break the limits of their creativity to develop learning methods and media that are developed in this era of industrial revolution 4.0. Even though there are many learning methods and media that are in line with the character of students today. For example, the use of games and their elements in



learning history in class. No doubt, in this era, there a lot of students who like games, whether it is based on android applications or websites. This kind of condition should be used by the history teacher by bringing the game and its elements into learning named gamification.

Caponetto (2014) in Dichev and Dicheva (2017:2) explains that gamification in education refers to the introduction of game design elements and gameful experiences in the design of learning processes. It has been adopted to support learning in a variety of contexts and subject areas and to address related attitudes, activities, and behaviors, such as participatory approaches, collaboration, self-guided studies, completion of assignments, making assessments easier and more effective, integration of exploratory approaches to learning, and strengthening student creativity and retention. Another thing is explained by Kapp (2012) that gamification is using game-based mechanics, aesthetics and game thinking to engage people, motivate action, promote learning, and solve problems. Based on this opinion, gamification in education is the use of games and their elements into learning activities with the aim of increasing learning motivation, solving problems, increasing learning activities and implemented collaboratively.

Gamification involves teachers and students in the implementation of learning and can also be done by blended learning. This strategy can train students in using information technology and the internet, so that they can not only get their historical material. This is a form of response from the emergence of the 4.0 industrial revolution which makes history teachers have to get out of their comfort zones in exploring using learning methods and media, so as to create a pleasant impression and learning atmosphere. With this breakthrough, it is expected to be able to answer the problems in history learning activities in industrial revolution 4.0.

II. LITERATURE REVIEW

Concept of Gamification

Lee and Hammer (2011:11) explains that gamification can motivate students to engage in the classroom, give teachers better tools to guide and reward students, and get students to bring their full selves to the pursuit of learning. Another thing is explained by Deterding et al (2011) that the use of video game elements (rather than full-fledged games) to improve user experience and user engagement in non-game services and applications.

In its implementation, applications that can be utilized include: kahoot!, socrative, class dojo, class badges, class craft, ribbon hero, play brighter, goose chase, minecraft:education edition and others. Learning with gamification relies on activities carried out by students. This is in accordance with Glover (2013) that one of the key concepts of goal-focused activity and this works best when there are clear checkpoints in an activity that can be used by learners to establish their progress and identify remaining tasks.

Game elements contained in gamification, including the following:

- 1) Users, who act as users here are students themselves. Games played by students are a form of design results from the subject teacher, which comes from the application or Learning Management System (LMS).
- 2) Tasks, are instructions that must be done by students. One form of task, for example, a question that must be answered by students, be it multiple choice or essay.



- 3) Points, serves as a value given to students because they successfully complete the given task or correctly answer the questions given. This point is given as a form of appreciation to students, as Schwartz (2016) said, points can be awarded for completing tasks or completing levels. They could be potentially worthy of credit in the course, or they could be used as a form of in-game currency and exchanged for unlocked content.
- 4) Levels/stages, is the level of each challenge/task that is done. The higher the levels/stages, the more difficult tasks are given. In order to be better classified, levels/stages are made based on levels/stages that are easy, medium, and difficult.
- 5) Badges, are awards given because they have made achievements during learning activities, for example getting the most points at each level or getting the highest score during learning activities. Nah et al (2014) said “Badges can also motivate learners to improve their performance through higher engagement, greater skill acquisition, and time spent on learning”. With this badge, this triggers students to get achievements during learning activities. The more badges obtained, the student can be said to be a superior student and recognized by his friends.
- 6) Leaderboards, is a ranking list of students who have the most points. With this ranking list, it can be a motivational trigger for students to be more maximal in doing their works.
- 7) Progress bar, is a progress diagram of all students based on the results of the work that has been done. In this diagram, students are seen to be stable in their successful completion or vice versa. With this progress bar, teachers can see the progress of their students' abilities.

III. RESULTS AND DISCUSSIONS

Gamification in History Learning

The Industrial Revolution 4.0 claims history teachers to be more creative and innovative in carrying out their learning activities, for example designing information technology-based learning activities. This is done as an answer to the problems that occur in the field, such as rigid, monotonous, and rote learning history.

Information technology is used in learning activities, such as games. One of the advantages is the number of students who like game play, whether it is from an android or website. Not only playing games in learning but also bringing the elements of the game into learning, hereinafter referred to as gamification. This will give the impression of learning that is different, more interesting, and motivated in the students' perspective. Glover (2013) explains that gamification typically makes use of the competition instinct possessed by most people to motivate and encourage productive behavior (and, as a result, discourage 'unproductive' ones).

Before conducting learning activities, history teachers must have learning media that will be used in learning activities. In making it, it does not need to start from zero but directly use it, such as the kahoot!, socrative, class dojo, class badges, class craft, ribbon hero, play brighter, goose chase, minecraft:education edition and others.



At this stage the gamification process will be explained with the help of the kahoot media. Before the learning activities begin, the history teacher must design the learning activities first, by making the questions easy, medium, and difficult. For learning activities can be done in class X, XI, and XII, the teacher only adjusts to the learning material that will be taught.

When learning activities begin, the history teacher gives material in advance with the help of drawing media as an opening activity to open up the students' thinking power and ask students to read the material as literacy activities. The next stage the teacher divides the class into five groups to carry out the next activity and each group signs in at kahoot! by selecting team mode and entering the pin that was given by the previous teacher.

The teacher continues the learning activities by allowing each group to work on the questions in the kahoot! application. In answering this question, group collaboration is needed so that the questions that are answered are appropriate and the processing time and has a working time limit. Every single question answered by students will immediately appear an analysis of how many students choose each answer option. Every correct answer will get a point and the wrong one does not get a point. This stage can also be used to directly discuss the answer to the question. The discussion of the questions can also be done after completing the questions and can also ask the reason for the students who chose the wrong answers. The discussion process will occur and students will indirectly learn to express their opinions according to their mindset. Even questions and answers can occur between students and students or students and teachers.

This continues to be carried out until the questions are raised to the next level. The higher the level, the more difficult the type of problem that is done and as a reference can make the problem based on the level of difficulty on the taxonomy bloom. At each level, the teacher can directly give the badge to the team that has the most points, for example, the team that has the ability to explain well during the discussion of the problem. This badge will trigger other groups to get it. One thing to keep in mind is that the badge can be taken again by the teacher if its performance decreases.

After all tasks have been successfully carried out, the leaderboards are listed in the application which is a list of group ranks that have the most points. Groups that are ranked 1 are the winners and can be appreciated by the teacher by giving rewards in the form of prizes or badges. After this core activity is complete, the teacher can see the progress bar as a whole which functions to analyze the level of problem and the ability of each group to answer the problem.

The characters that appear in the gamification learning activities are as follows:

- 1) Discipline, seen from the limited time to work and all students are required to work before time runs out.
- 2) Curiosity, seen from students who take part in this learning activity by creating an account in the kahoot! Application and search deeper about its use.
- 3) Communication, seen when students are working on questions that require communication with fellow group members and also when the session discusses each question that has been done.



- 4) Social care, seen when helping the group in working on the questions or adding answers during the discussion.
- 5) Hard work, seen from students who try to solve questions to the final level.
- 6) Appreciating achievement, seen from each group member who wants to be useful and contribute to the group in finding the right answer when working on the questions and recognizing other groups that get badges and are ranked higher than the group.

By doing gamification in this learning activity, not only the ability to use information technology, but also there are characters that can grow and develop in later activities or even in everyday life. The advantages that can be gained from learning activities using this gamification are learning activities that are more fun, creating an atmosphere of competition that can break the limits of students' abilities, the emergence of cooperation among students, and increase students' curiosity.

IV. DISCUSSIONS AND RECOMMENDATIONS

The use of gamification in learning activities can be helped by the Kahoot! Application. The learning process begins with the teacher conveying learning material by asking students to do literacy activities first. Then students are asked to enter the Kahoot! Account with team mode based on their respective groups. Students are asked to work on the tasks/questions that are in the Kahoot! Application. Every question that is done gets a point and after the question is done there is a discussion to clear it. The question is done from an easy, medium, to difficult level. The badge is given to the group that has the highest score or the group that is able to solve the problem to the hardest level. Leaderboards are shown at the end of learning as a reference for students to be better in the next learning.

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