Fostering Creative Thinking Through Gamification in History Learning

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Abstract. This paper aims to describe how to foster creative thinking through gamification in history learning. The existence of this goal is motivated by the problem of low creative thinking in history learning. This problem the author observes is based on a literature study on historical learning research. One solution that can be done is to do gamification in history learning. Gamification is a learning activity by utilizing game elements in it. In its implementation, a platform or Learning Management System is needed that provides these elements. The research method used in this paper is to use a literature review. This method is a research method that discusses systematically identifying, evaluating and synthesizing research results that have been published. One of the objectives of the literature review is to analyze and synthesize the topics under study and discover new things from the research being studied. Several studies have attempted to involve creative thinking through gamification in learning, and the result is that gamification can foster and enhance students' creative thinking. To see the growth of creative thinking can be seen during the learning process by using gamification on task elements, namely tasks that must be completed by students, such as working on questions. In this element, the teacher must design the question by including each discussion of the answer in the form of a video, text, or image.

Keywords: Gamification · History Learning · Literature Study · Creative Thinking

1 Introduction

In the current learning activities, it is recommended to integrate these 21st-century skills in their learning activities. As for the integration process, you can use an e-learning platform or application that can be accessed by students and teachers or lecturers. The concept of 21st-century education in the industrial era 4.0 is characterized by the provision and development of 21st-century skills [1]. The 21st-century skills that are the core of the 21st-century education concept can be developed through the historical learning process. A form of 21st-century skills that has the potential to be developed through history learning, namely creative thinking skills. These skills are needed in the process of constructing students' knowledge in learning activities. This skill will develop well if the learning process is intentionally directed to use it [2, 3].

The creative thinking process carried out by students is able to generate solution ideas from one problem and from something that already exists is able to produce something new. Creative thinking is the ability to see various points of view to solve a problem at hand. This ability can be grown by developing curiosity and imagination through learning activities [4]. Creative thinking skills of students can be seen in four aspects, namely, fluency which can be seen from fluency in seeing solutions to solve problems, flexibility which can be seen from looking at a problem from various points of view, originality which can be seen from involving synthesis in placing information and elaboration, which can be seen from reinforcing ideas through other sources [5].

Creative thinking skills have the opportunity to always develop, can be learned, and can be trained [6]. Based on this, creative thinking skills do not only pursue conceptual mastery but can also train students to be able to master these skills as an effect of the learning activities that have been carried out. Supriatna [7] adds that creativity can arise even from incomplete or incomplete material. Incompleteness and incompleteness can stimulate students to ask questions or find answers on their own. The learning process is considered as a creative process by meeting the criteria of sensitivity to problems, originality, accuracy, ingenuity or ingenuity, novelty, usefulness, and appropriateness in relation to ideas, results or products [8].

Based on the data found through the literature study that there are several research results that state that students' creative thinking skills are still [9–12]. There are also those who state that students' creativity is still relatively low [13]. The existence of this problem requires an effort that can be a solution in solving this problem. One of the efforts to overcome the low creative thinking of students is to utilize game technology. This is as expressed in several research results that digital games have a contribution in influencing students' creative thinking [14, 15]. The results of other studies, namely gamification, has a significant effect on students' creativity. The existence of these findings indicates that gamification is one of the right formulas in growing students' creative thinking in learning [16].

Gamification is an effort to integrate game elements into learning activities and have opportunities to motivate students [17, 18]. Another definition states that gamification is using game-based mechanics, aesthetics and game thinking to engage people, motivate action, promote learning, and solve problems [19]. Applications that can be used to utilize gamification include kahoot!, socrative, class dojo, class badges, class craft, ribbon hero, play brighter, goose chase, minecraft: education edition and others [20].

Gamification in learning will run optimally if its application makes students more challenged and fun. The essence of using games in learning is a fun atmosphere. All learning methods must be directed at creating a happy atmosphere in learning or joyful learning [8]. This paper aims to systematically review the literature and provide a description of the design of gamification implementation in history learning that can foster students' creative thinking. This research provides a description of research findings and insights that can be used as a benefit in self-development in the field of research and learning.

2   Research Method

The research method used in this paper is a literature review, which is a method that examines the knowledge, ideas, or findings critically in the theoretical and methodological literature on a particular topic. The literature review in its implementation is carried out systematically in collecting and synthesizing research results that are following the topics studied [21, 22]. The criteria needed in carrying out this research method are: choosing a review theme, determining articles that are appropriate to the research topic, conducting library analysis and synthesis, and review writing organization. The purpose of this research method is to gain a broad understanding of information related to the topic raised [23].

3   Result and Discussion

The implementation of learning activities through gamification can be done by blended learning and distance learning. Given the current pandemic conditions, blended learning can be done with the help of video conference provider platforms, such as zoom meetings, google meetings, and others. In preparation for teaching, teachers must have prepared their learning materials, such as lesson plans and platforms that will be used to support their gamification activities. The learning implementation plan is needed to make it easier to manage or manage the available time.

The teacher must also design the gamification elements that will be used in learning activities on the platform that will be used later. The platform does not have to be created yourself, but it can also use an existing platform. The gamification elements needed in designing learning activities include the following:

1. Users are Someone who acts as a player in a game, specifically for learning activities, then those who work as users are students. Users will carry out tasks that must be done on a platform that has been prepared by the teacher or lecturer.
2. Tasks are instructions that must be done by students. The forms of tasks that can be used in learning activities, namely: multiple-choice, short entry, many answers, match questions and essays. For the purposes of this paper, we recommend multiple-choice assignments. The reason is that this task is able to provide opportunities for students to carry out thinking processes, especially creative thinking. Another reason is that this type of task is able to show scores on the correct answers done by students and can provide an explanation of the answers to each question they do.
3. Points is the value given by students after doing the given task. Points can also be awarded after completing studies in each level. Points can also be used as a form of in-game currency and can be exchanged for unlocked content [24]. Another idea is that the points collected can be used to work on other assignments so that if students want to do other projects, they must manage a certain number of points. The existence of this idea can stimulate students to be serious in doing their assignments so that they can do other tasks.
4. Levels/stages are the level of each task that is done. Levels can be created based on the level of difficulty. Task elements can also be created based on their levels,

such as low, medium, and challenging levels. It can also be made based on creative thinking indicators, such as level 1 for questions with fluency indicator type, level 2 for flexibility indicator type, level 3 for originality indicator type, and level 4 for elaboration type. It can also be related to other things, such as level adjustment with High Order Thinking Skill (HOTS) or different levels.

5. Badges is a feature that serves as an award given to students for their achievements in completing assignments. This form of achievement can be seen from being ranked first in the order of points earned or successfully completing assignments at each level or other things so that in this feature, the teacher or lecturer can design badges according to the characteristics of students or based on the level of difficulty in completing assignments. The quality can provide a stimulus to students to be more motivated and improve their performance through the learning process carried out, acquiring other skills during the learning process [25]. The existence of this badge can also be a stimulus for students to compete to be the best because the more badges they get, the students can be said to be superior students and are recognized by their friends.

6. Leaderboards is a list of student rankings seen based on the points earned after completing the given task. Leaderboards will function optimally if the teacher or lecturer is able to communicate how important these leaderboards are so that students will be more motivated in completing their tasks. One example is the teacher giving rewards to students for students who are in the order of 1–3, for example, where this reward is in the form of additional points or other things.

7. Progress bar is a recap or summary of points obtained by students from the first assignment to the final assignment. This summary or summary can be in the form of graphs or diagrams. With such a form, it will be easy to see the progress or decline of the points that students get in each task they do.

After these elements are designed, the next step is for the teacher can design learning activities. One of the potentials that can be grown and developed using these elements is students' creative thinking skills. The core element that plays a role in fostering creative thinking is the tasks element. Based on this, the teacher must design history learning materials into tasks that must be done later. In this condition, we see that it is not only students who are required to have the ability to think creatively, but teachers also have to have this ability which can be expressed in the solutions they offer.

The form of tasks that the teacher can make can be in the form of multiple choices. As for growing students' creative thinking skills, multiple-choice questions are made based on indicators of creative thinking skills and questions are made based on the level of difficulty presented in each level. The question can be viewed based on historical material or contextual relationships that connect historical material with contemporary life. Historical materials can use Indonesian history subjects at the high school level or materials in higher education, such as local history, Indonesian history during the colonial period, and others.

The implementation of gamification can be seen when teachers carry out core learning activities by allowing students to work on assignments or questions on the platform that has been provided. As for the process can be done independently or in groups with blended learning through the application zoom, gmeet, and the like. In carrying out this

task, teamwork is needed to get the right answer, so it is necessary to divide the tasks for each member. In the division of tasks, it can be in the form of distributing material that must be understood for each member so that each member has his responsibility for the theme of the task given.

For every question or task answered by the student, the answer to the question/task will appear on the screen, and if the answer is correct, you will get points, and those who are wrong will not get points, or there will be a point deduction. Creative thinking can grow at this stage; if students finish working on their assignments, there is a discussion of the answers to the task material they are doing. The discussion can be in videos, writings, or images that are adjusted to the indicators of creative thinking. The existence of this explanation stimulates students in growing creative thinking. So, in this gamification, students do assignments and learn material based on the explanation. This stage can also be used as a discussion activity for students regarding the questions and answers they have listened to.

For each work at each level, the teacher should be able to use the badge on the team that has more points or is faster at doing it. The existence of the badge feature is one of the stimuli to increase students' enthusiasm and motivation in doing assignments seriously. Badges can be used to sign that the student has a good achievement in completing assignments at each level. Can also make a rule that a student with three badges will have a higher chance of getting the maximum score on his report card or the final grade of his course. Badge ownership can also be lost if the student's performance is declining or unstable.

After completing the task, the application will display the overall point leaderboards. The first rank can be appreciated by giving a badge so that students will be motivated again to implement learning at the next meeting. This feature will also show the number of points earned by all groups. In addition, the teacher can also see the overall progress bar to see the development of student's creative thinking skills from the number of points obtained. Meanwhile, if there are still students who get points below the minimum criteria, they must work on the assignment again so that the gamification elements can be used optimally.

4   Conclusion

The implementation of gamification in history learning has the potential to foster students' creative thinking. This can be seen in the core learning activities when students do the assignments given by the teacher. The tasks given by the teacher must meet the indicators of creative thinking. Furthermore, for each task that students successfully do, there is also a discussion about the discussion of the task. With this condition, even the teacher must know about creative thinking to design the game platform.

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