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Research Paper

Gamification as a Strategy to Improve Student Learning Motivation : Preparing Student for 21st Century

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Abstract

The development of digital technology is so fast where human beings cannot be separated from electronic devices. Technology has been used to help doing the task and work easily. The important role of technology is what brings human to civilization in the 21st century. To prepare students, we try to create new research related to gamification based learning that basically can be done anytime and anywhere. It is useful to improve the spirit and sense of fun in learning, so that students who have high learning motivation have a lot of energy to carry out learning activities and can obtain high learning outcomes. The use of gamification based learning strategy brings significant differences compared with conventional learning strategies in term of learning outcomes. There are differences in learning outcomes between groups of students who have high learning motivation and groups of students who have low learning motivation

Keywords: *Gamification; Strategy; Learning Motivation; 21st Century*

1. Introduction

Students' passive activities, such as reading and watching activity make learning process can't run well. Only active communication with their colleagues, facilitators, and other learning resources make process run well. This is because active communication is an important factor required by the learning approach in achieving learning objectives [1]–[4].

The development of digital technology is so fast where human beings cannot be separated from electronic devices. Technology has been used to help doing the task and work easily. The important role of technology is what brings human to civilization in the 21st century. For example, we can make a elearning based on web, android, or others method [5]–[7].

Students with low learning outcomes can be caused by the weak ability to think and understanding the concept that affects the students' skills in solving life problems [8], [9] If ones have problem-solving skills, one can solve similar or different problems in everyday life [10]–[12]. To prepare students, we try to create new research related to gamification based learning that basically can be done anytime and anywhere.

2. Method

To get the right result, it is necessary to use a method that can test each treatment group so that it can show the influence of gamification use on learning to learning result, and interaction between game usage and learning motivation toward learning result.

Table 1. 2x2 Factorial Experimental Design Table

		Using Game in Learning	
		Using Game (1)	Not using Game (2)
Learning motivation	High LM (1)	Y11	Y12
	Low LM (2)	Y21	Y22

The population of this research is the 4th semester student of Islamic University of Darul Ulum Lamongan in the Faculty of Education Sciences. Meanwhile, the samples are 32 students of morning class and 33 from afternoon class of indonesian language and literature study program. This group is quite homogeneous because students of all ages and education levels are the same.

3. Result and Discussion

The results were based on descriptive analysis of the research sample totaling 65 people. The following describes of sample based on learning motivation and Gamification Strategy.

Table 2. Research Results Based on Gamification Strategy and Learning Motivation

		Using Game in Learning	
		Using Game (1)	Using Game (1)
Learning motivation	High LM (1)	12, 17.9%	22, 34.5%
	Low LM (2)	20, 20.7%	11, 26.9%
Total		32, 38.6%	33, 61.4%

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From the previous table, it can be explained that the achievement motivation of students using Gamifikasi learning strategy is relatively high because of the treatment in the class (Gamification learning strategy). This strategy encourages students to be active in learning activities and motivated to learn more fun so that student learning outcomes are relatively increased.

3.1. Gamification as a Strategy

According to Shea, Pickett and Pelz, effective online learning environments should encourage: interaction between students and lecturers, interaction and cooperation between students, rapid feedback, time assignments, active learning techniques, high communication and respect for differences and how to learn from each student[13]. There are several recommendations for teachers and organizations to organize content in platform guidelines[14], [15] (fast and positive feedback, formulating tasks based on skill levels, experiments and task repetition, smaller classes, different paths to destination, use of different game mechanism, and fun activities although current failures still exist. The main purpose of e-learning is the high efficiency, effectiveness, involvement, satisfaction and motivation of the students. These objectives can be achieved through the use of game mechanism and gamification.

The strategy is presented in Fig. 1, and comprises the following key elements: e-learning management, essential factors in e-learning, user experience elements, development phases (analysis, planning, development, implementation and evaluation), game mechanics, game dynamics, elements gamification in e-learning

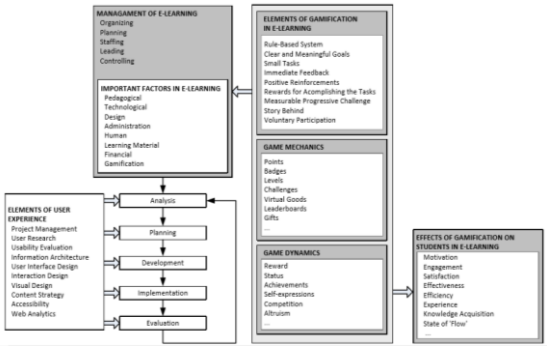


Fig. 1: The model to introduce gamification into the field of e-learning

The model of e-learning in higher education, including the elements of gamification should be based on appropriate management. The good e-learning management means organizing, planning, managing staff, leading and controlling are essential elements of e-learning. the important elements in e-learning are: pedagogical elements, technology, design, administration, human, finance and gamification

Kapp defines Gamification as a strategy for applying mechanisms, aesthetics, and game thinking. The form of the strategy is to include, motivate people to achieve, organize learning, and solve problems[16], [17]. Glover concludes that gamifications provide additional motivation to ensure learners follow full learning activities. Based on these two opinions can be concluded that the gamication or gamification is a learning strategy that implements the elements of the game in non-game applications with the aim of binding and motivate users to solve a problem in the learning activities completely[18].

3.2. Student Learning Motivation

According to Hitipieuw learning is the acquisition, development, or development of new knowledge, skills or attitudes that are the result of individual experience in the form of: the external interaction of the individual with his environment, the result of internal interaction within the individual between the information recieved and pre-existing information in the structure of his experience[19]. motivation is an internal process that activates, requires and maintains the behavior over time[20].

Motivation to learn directly lead students to achieve the objectives and engage in a particular learning activities. Motivation has an important role in giving passion, spirit and sense of fun in learning, so that students who have high learning motivation have a lot of energy to carry out learning activities and can obtain high learning outcomes.

3.3. 21 Century

In the mid of the uncertainty and challenges was faced by each of these people, a change of paradigm in the educational system must be required to provide a set of 21st century skills needed by learners to address every aspect of global life [21]. The changes in question are not about curriculum content changes, but changes in the act of simple action toward comprehensive action and change of traditional teaching dominance to more modern technology-based teaching.

Richard Crawford calls this 21st century transformation process of the Era of Human Capital [22], an era in which science and technology, especially communications technology, is growing so rapidly that affects the free competition so strictly in all aspects of human life.

The 21st century is a century where there is no data confidentiality and everything is open and can access anything, whenever and wherever it is[23], [24]. In this century all activities using machines (computing) is able to reach all the work routine (automation). This century also requires the transformation of education thoroughly so as to build a quality that is able to advance knowledge and achievement.

4. Conclusion

In conclusion, it is found that there are differences in learning outcomes between groups of students who were treated using gamification learning strategies compared with groups of students using conventional learning strategies. There are significant differences in learning outcomes compared with conventional learning strategies. There are differences in learning outcomes between groups of students who have high achievement motivation and student groups who have low achievement motivation. There are significant differences in learning outcomes compared with the group of students who have low achievement motivation. The group of students who have high achievement motivation have significant differences in learning outcomes compared with the group of students who have low achievement motivation. there is interaction to learning outcomes between learning strategies and achievement motivation

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