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Interest in Gamification Learning Based on Student Learning Styles

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Abstract

This study aims to analyze student interest in gamification-assisted learning in terms of student learning styles. This research is a type of descriptive research using a qualitative approach. The subjects are students of the Mathematics Education Study Program, Faculty of Teacher Training and Education, USN Kolaka, a research course program with 20 students. The data collection technique used in this research is to use a questionnaire. The instrument used in this study was a questionnaire of learning styles and interest in learning in gamification-assisted learning. According to Miles and Huberman, the data analysis technique used in this study is a qualitative data analysis technique, namely data reduction, data presentation, and conclusion drawing. The results showed (1) the average student interest in gamification-assisted learning with word walls was in the high category, (2) student learning styles in research subjects mostly tended to be multimodal (60%), and (3) students with unimodal learning styles have high interest, bimodal, and trimodal learning styles have a very high interest in learning with gamification-assisted learning.

Keywords: interest in learning, gamification, learning style

A. Introduction

Higher education is an educational institution that prepares students to become members of the community who have both academic and professional abilities (Suryana, 2018). In carrying out this function, the lecturer plays a very vital role. Lecturers are components in universities who are in direct contact with students in carrying out their duties. Therefore, a lecturer is required to provide excellent service to his students so that the goals of higher education as a printer of quality human resources can be realized (Farman et al., 2021).

In fact, it is not uncommon for some educators can still not provide full service in the learning activities. In learning, there is a gap or mismatch between the goals and the paradigm used to achieve the goals (Abdullah, 2017). Educators only refer to learning tools that are sometimes inappropriate, using inappropriate models, approaches, and methods (Farman, 2020). Students tend only to hear and accept explanations from educators, and students have not been able to express their opinions widely and openly (Prasetyawati, 2016). Some educators have not mastered the maximum use of technology (Farman & Chairuddin, 2020). This phenomenon is a condition that is in line with several lecturers. Observation results show that the use of learning models in lectures carried out by lecturers has not been referred to and is by student learning styles. The implementation of lectures is dominated by the use of learning tools which are almost the same from year to year, and the lack of innovations in learning that utilize technology as a learning medium. Learning that does not utilize the media and does not involve students actively in class will reduce students' interest in learning.

Interest is an important component in learning (Sutarto et al., 2020). Interest in learning is a person's full involvement with all his mind and attention to acquire knowledge and understand the scientific knowledge he is studying. Interest in learning in a person can be driven by himself or influenced by people or something outside himself, for example, teachers, parents, friends, books, learning media or others. Interest in learning shows learning activities that are self-selected and fun to form a habit in a person (Vainikainen et al., 2015). Give suggests several roles of interest in learning. Interest can give birth to attention simultaneously, helps create concentration, prevents interference from outside, strengthens the attachment of learning materials in memory and minimizes boredom of learning within oneself (Hendriana, 2017). Interest in learning is the desire of students to improve study habits, which are characterized by a diligent, tenacious attitude and have high enthusiasm in learning so that satisfactory learning outcomes can be achieved (Nurhandita et al., 2021). Interest does not appear suddenly, but because of participation, experience, and learning habits (Azmidar et al., 2017). Therefore, it is necessary to involve students in learning. Because without this, learning is limited to aborting obligations without knowing the meaning of learning, especially in applying the knowledge gained in everyday life (Chairuddin & Farman, 2019).

The phases for developing interest are important to understand and implement by educators by knowing their learning styles. Effective learning is learning that is by the student's learning style. Wehrwein et al. (2007) revealed that one way to improve the quality of learning is to adapt a learning approach that meets the tendency of students' learning styles. Learning styles, commonly referred to as learning modalities, are various ways the brain system uses to access information and create experiences. Awareness of learning style preferences has beneficial implications for learning. Educators can use this knowledge to facilitate learning by choosing the right learning model according to the learner's learning style. In addition, students themselves can use this information to change their study habits by doing appropriate learning methods to improve their academic achievement (Urval et al., 2014; Sinha et al., 2013). Chatib revealed that there are no difficult lessons if educators carry out learning under students' learning styles (Sari, 2014). Thus, learning styles can help educators identify and solve learning problems among students and help students become more effective learners.

Learning styles, commonly referred to as learning modalities, are various ways the brain system uses to access information and create experiences. Fleming defines four learning modalities, namely visual (V), auditory (A), read/write (R), and kinesthetic (K), which are better known as VARK. VARK categorizes student learning based on the preferred nervous system when receiving information (Choudhary et al., 2011). Visual learners prefer to learn through visual aids that represent ideas with graphs, charts, diagrams, or symbols. Auditory learners learn by listening through lectures, discussions, or listening to tapes. Read/write students prefer learning activities through reading and writing activities. Kinesthetic learners are more interested in learning through experiences including moving, active exploration of the world, project work or conducting experiments (Stephenson, 2019).

Several studies have shown that learning can increase interest in learning using gamification (Permata & Kristanto, 2020; Isnawati, 2021). Gamification uses elements in games or video games to motivate students in the learning process and maximize feelings of enjoyment and engagement in the learning process. Nick Pelling first introduced gamification in 2002. The steps for applying gamification in learning: (1) Identify the learning objectives, (2) Determine the big idea, (3) Create game scenarios, (4) Design learning activities, (5). Create groups and (6) Apply game dynamics (Yusuf et al., 2017). Gamification provides an alternative to make the learning process more interesting, fun and effective (Yusuf et al., 2017). Gamification in learning

provides positive benefits to students where they participate more actively in discussions and collaborations and are more enthusiastic in doing all activities (Winatha & Ariningsih, 2020).

The educational game used in this study is an educational game on the word wall website http://wordwall.net/. Wordwall is an interesting website that can be accessed anytime and by anyone in any browser for free. Wordwall is designed to make it easier for teachers to create online learning media based on educational games and customise the material taught. Wordwall has many templates or ready-made game types and characteristics for game-based interactive learning (Isnawati, 2021). The types of educational games found on Wordwall include: (1) Match Up (choose the answer that matches the statement); (2) Random Wheel (describe the picture or answer to the selected question from the spinning wheel); (3) Find the Match (choose the answer that matches the statement by clicking on the correct answer to be eliminated repeatedly until all answers are lost); (4) Hangman (complete a word, phrase, or sentence by choosing the right letter); (5) Anagram (composing a word or phrase by dragging letters into the box provided); (6) Maze Chase (answering the questions provided by going around the maze (maze) then heading to the correct answer zone while avoiding the enemies) and several other games.

Based on this description, it is necessary to study interests and learning styles, especially in gamification. So far, several studies have only limited students' interest in gamification without paying attention to their learning style. There are also those who examine learning styles without paying attention to students' internal factors, such as interest. So it is necessary to research interest in gamification learning in terms of learning styles. Thus, the purpose of this study was to analyze student interest in gamification-assisted learning in terms of student learning styles.

B. Methodology

1. Research Design

This research is a type of descriptive research using a qualitative approach. The subjects are students of the Mathematics Education Study Program, Faculty of Teacher Training and Education, USN Kolaka, a research course program with 20 students.

2. Instruments

The data collection technique used in this research is to use a questionnaire. The instrument used in this study was a questionnaire of learning styles and interest in learning in gamification-assisted learning. The VARK learning style questionnaire contains a statement of the VARK learning style favoured by the research subjects. The VARK questionnaire instrument used is a standard questionnaire obtained from The VARK Questionnaire Version 7.1 on the www.varklearn.com page. The questionnaire consists of 16 statements with four answer choices that represent the VARK indicator. Interest questionnaires are compiled based on feelings of pleasure, interest, attention, curiosity and activeness in gamification-assisted learning. The interest questionnaire consists of 18 statements with five answer choices using a Likert scale.

3. The technique of Data Analysis

According to Miles and Huberman, the data analysis technique used in this study is a qualitative data analysis technique, namely data reduction, data presentation, and conclusion drawing. Data reduction is done by collecting data, namely learning styles and student interest in learning. After the data is reduced, the next step is the presentation of the data, namely the analysis in tables, graphs or diagrams. At the stage of taking or drawing conclusions, it is done by looking at the relationship of interest in student learning styles.

Data analysis of interest in learning is done by finding the average student interest in learning. Then the averages are grouped by interest categories as presented in Table 1 below

Table 1. Categories of Learning Interest

Interval	Category
85 ≤ IGL ≤ 100	Very High
70 ≤ IGL < 85	High
55 ≤ IGL < 70	Medium
40 ≤ IGL <55	Low
0 ≤ IGL < 40	Very Low

Analysis of the learning style tendencies of each student is done by comparing 4 (four) choices of visual (V), auditory (A), read/write (R) and kinesthetic (K) learning styles. The tendency of learning styles is determined by: (1) If students choose one choice of learning style most of all learning styles, then students tend to be dominant in the choice of learning styles, (2) If there are two or more choices of learning styles, then the student belongs to the combination of the two or more learning styles, (3) If there are two choices from two groups of learning styles whose difference is 1, then the student belongs to the combination of the two learning styles (Farman et al., 2021).

C. Findings and Discussion

1. Student Learning Style

VARK learning styles of students, which are divided into unimodal and multimodal, are presented in Table 2 below

Table 2. Student Learning Style

Learning Style			Frequency	Percentage
Uni modal		V	1	5%
		A	4	20%
		R	2	10%
		K	1	5%
Multimodal	Bimodal	AR	4	20%
		AK	1	5%
		RK	2	10%
	Trimodal	VAR	1	5%
		ARK	4	20%
Total			**20**	**100%**

Table 2 shows that student learning styles tend to be multimodal (60%). However, when viewed from the percentage of overall learning styles, most of the students tend to Audio (20%), Audio-Read/Write (20%) and Audio-Read/Write-Kinesthetic (20%).

2. Student Interests

The category of learning interest (Farman & Chairuddin, 2020) of students with gamification-assisted learning is shown in Table 3 below.

Table 3. Interest in Gamification Assisted Learning (IGL)

Interval	Category	Total	Percentage
85 ≤ IGL ≤ 100	Very High	10	50%
70 ≤ IGL < 85	High	10	50%
55 ≤ IGL < 70	Medium	0	0%
40 ≤ IGL <55	Low	0	0%
0 ≤ IGL < 40	Very Low	0	0%

Students' interest in gamification-assisted learning is in the very high (50%) and high (50%) categories. Meanwhile, based on the indicators of interest in learning mathematics, it is presented in Table 4

Table 4. Category of Student Interest Indicators

Indicator	Score	Category
Feelings of pleasure towards gamification	89,5	Very High
Interest in gamification	87	Very High
Attention in gamification	80,3	High
Curiosity towards gamification	72	High
Activeness in gamification	89,75	Very High
Average	**82,27**	**High**

Table 4 shows that all student interest indicators in gamification-assisted learning are in the very high category, except for curiosity and attention to gamification, which is in the high

category. Students' interest in learning in learning is 82.27 which means that students' interest in gamification is in the high category. Permata & Kristanto (2020) research that gamification can be used as a strategy to increase student interest in learning.

3. Learning Interest in terms of Student Learning Style

Learning style is an approach that explains how each individual learns or the way each person takes to concentrate on the process and master difficult and new information through different perceptions. Student learning styles greatly determine how individuals receive and absorb knowledge so that students can master a lesson they learn (Kurniati & Sari, 2019). With different learning styles, students also have different interests in learning. The following are the results of the analysis of student interest in learning in terms of learning styles:

Table 5. Student Interest in Learning in terms of the classification of learning styles

Learning Style	Score	Category
Unimodal	83,19	High
Bimodal	87,2	Very High
Trimodal	88,05	Very High

Based on Table 5, students with unimodal learning styles have high interest, whereas bimodal and trimodal learning styles have very high interest in gamification-assisted learning. More specifically, students' interest in learning in unimodal learning styles is described in the following table:

Table 6. Student Learning Interest in terms of unimodal learning style

Learning Style	Score	Category
V	73,3	High
A	86,67	Very High
R	86,11	Very High
K	86,67	Very High

Table 6 shows that the Visual (V) unimodal learning style is highly interested in gamification-assisted learning. Audio (A), read (R), and Kinesthetic (K) learning styles show a very high interest in gamification-assisted learning. Meanwhile, students' interest in learning in multimodal learning styles is presented in the following figure:

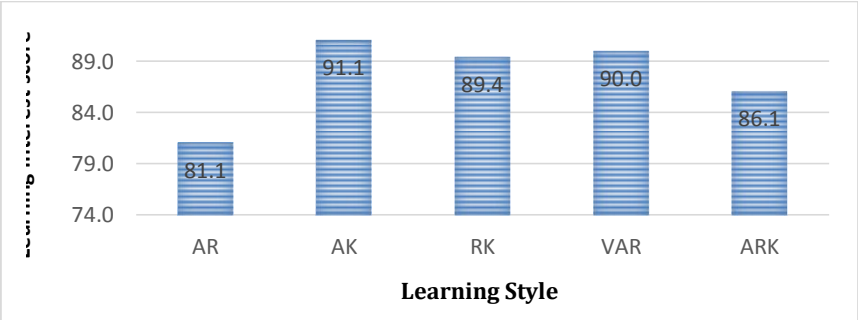
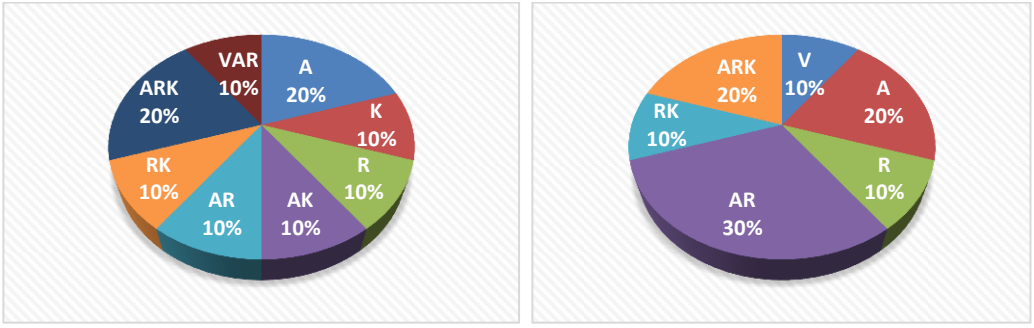


Figure 1. Learning Interest based on Multimodal Learning Style

The figure shows that students' learning interest in the bimodal Audio-Read/Write (AR) learning style has a score of 81.1 (high category), student learning interest in the Audio-Kinesthetic (AK) learning style has a score of 91.1 (very high). Student learning interest in the Read/Write-Kinesthetic (RK) learning style is 89.4 (very high). The trimodal Visual-Audio-Read/Write (VAR) learning style has an interest in learning with a score of 90.0 (very high), and the Audio-Read/Write-Kinesthetic (ARK) learning style has a score of 86.1 (very high).

Students' interest in learning with gamification-assisted learning is in the very high (50%) and high (50%) categories. The student learning styles included in very high and high learning interest are described in the following diagram:



(a) (b)

Figure 2. Interest in Learning (a) Very High Category, (b) High Category

The figure shows that the learning style is unimodal A (20%), R (10%), K (10%); bimodal learning styles AK (10%), AR (10%), RK (10%) and trimodal learning styles ARK (20%) and VAR (10%) have a very high interest in gamified-assisted learning. While learning style A (20%), R (10%), K (10%); bimodal learning styles AK (10%), AR (10%), RK (10%) and trimodal learning styles ARK (20%) and VAR (10%) have a very high interest in gamified-assisted learning. Thus, the use of gamification needs to be done to attract students' interest in learning. The use of information and communication technology through gamification in learning needs to be applied to accommodate students' needs and learning styles (Takdir, 2017). Therefore, teachers are required to create learning situations that are active, creative, innovative, effective, and fun in the process of learning activities (Farman et al., 2019).

D. Conclusion

Based on the results and discussions that have been explained, it can be concluded that student interest in gamification-assisted learning with wordwalls is in the very high (50%) and high (50%) categories with the overall average interest in the high category. Most of the students' learning styles in research subjects tend to be multimodal (60%). Students with unimodal learning styles have high interest and bimodal and trimodal learning styles have very high learning interests in gamified-assisted learning.

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