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Can Kahoot Enchance Mathematic Disposition?

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Abstract

Kahoot is a game online that can applied in classroom using smartphone, computer, etc. This study aims to describe mathematical disposition of students by implement of Kahoot as game based learning in linear programming classroom. The subjects in this study as many 29 students. Subjects then answered 10 questions in 90 minutes using Kahoot which are students already learned. After answered the questions, subjects are asked to giving opinion about implement of Kahoot through questionnaire that already exist on Google Form. Quantitative data were collected. Quantitative data were collected using questionnaire. The questionnaire is used to measure the mathematical disposition. Data analysis, consists of two types, are quantitative and qualitative data. Quantitative results are shown as the means and qualitative data are shown as frequencies. The result of this study shows that Kahoot can enhance mathematical disposition of student in linear programming classroom.

Keywords: Kahoot, linear programming, mathematical disposition

1. Introduction

Not only adults but also children have grown up playing games in our daily life. Unfortunately, in formal education, games for learning often undiscovered. Educator still focus on structured learning material in the form of pdf files and power point. Why do we need to choose games for learning?

From the learner's view point, using a game in learning, would be more fun and have challenge to achieving better score. From the teachers' perspective, we can grow up the learners' interest, can increase the motivation of students, and become more interactive. Over all, games in learning can help students to learn effectively. Games have been found to be beneficial for academic achievement, motivation, and classroom dynamics [1]. Games have also been found to have similar effect in higher education [2]. Previous research indicates that games can be improve learning, increase motivation and engagement [3-7]. Now, which game we can choose and why we choose that game?

There are many games that can be used in the mathematics learning. Researcher choosing the game that players often get motivated by playing those game, has single to multi-player, be able to various size of the student group, easy to use for students, welcome everyone to participate, can cover our topics, and we can get the results to explore students' knowledge. In this case, researcher had choose Kahoot. Kahoot is a free online game designed to allow instructors to quickly and easily create question based learning games that can be used to assess students learning, review concepts, teach new material, and/or facilitate classroom discussions [8].

The other research stated that Kahoot can increase students' word distribution who had difficulty in learning physical science lessons. Kahoot can increased students' focus and task behavior [9]. In this study, researcher would to determine: can Kahoot enhance

mathematical disposition and how it increased by implement Kahoot in linear programming classroom.

2. Method

Subjects who participated in the research were undergraduate students studying at Faculty of Teacher Training and Education in Universitas Sarjanawiyata Tamansiswa Yogyakarta as many as 29 participants. They were students in program linear classroom.

The implement of Kahoot in linear programming classroom handled by the teacher. Ten questions given to students by the Kahoot application and then subjects answered that questions in 90 minutes. After answered the questions, subjects are asked to giving opinion about implement of Kahoot through questionnaire that already exist on Google Form.

Quantitative data were collected. Quantitative data were collected using questionnaire. The questionnaire is used to measure the mathematical disposition of application Kahoot in linear programming classroom. Those questionnaire is evaluated by subjects by using a 4 point Likert-type scale (completely agree, agree, disagree, and completely disagree). An answer of "Completely agree" is associated with a score of 5 points whereas "Completely disagree" of 1 point. The percentages were calculated and then the results were analyzed.

Data analysis, consists of two types, are quantitative and qualitative data. Quantitative results are shown as the means and qualitative data are shown as frequencies. The mathematical disposition of students is investigated in this research.

3. Result and Discussion

The results of this research is showed on Table 1.

Table 1. Mathematical Disposition Results

	Questions	Mean
1	Kahoot can increase my interest	3.1
2	Study with Kahoot become more successful	3.04
3	Kahoot increases my motivation by being in competition	3.08
4	I communicate more with others about the topic	3.12
5	I want Kahoot to be used in other lessons	3.2
6	Using Kahoot through my smartphone makes me feel happier	3.2
7	Rewads can motivate me	3.04
8	Kahoot allows me to see my achievement	3.08
9	Kahoot helped me to understand the topic	3.28
10	Learning with Kahoot become more fun	3.56
11	Kahoot is fun	3.28
12	It's important to winning badges through Kahoot	3.2
13	Kahoot allows the information exchange with friends	3.38
14	Information can be recalled more easily	3.16
15	I am sad when I am unsuccessful answered the questions	3.16
16	My reputation improves when I win the game	3.04
17	If I can answer correctly, it can improve my self confidence	3.2
18	Kahoot can increase my ambitious for success	3.1
19	Kahoot increase classroom competition	3.24
20	Kahoot can increases my speed in answering question	3.16
21	Kahoot makes me become more successful in the lesson	3.28
22	Sharing the score makes me feel better	3.12
23	Kahoot practice my time-management skills	3.4
24	Difficult topics become fun with Kahoot	3.28
25	The will to win increases by Kahoot	3.32
26	Kahoot makes me be successful if used in other lessons	3.12
27	Competitive environment in Kahoot increases my motivation	3.48
28	Competitive environment in Kahoot increases my interest	3.2
29	Kahoot can increases the competition in crowded group work	3.36
30	Kahoot increase interest in crowded classes	3.44

Table 1 shows the questionnaire results of mathematical disposition. Overall the results show that Kahoot can enhances mathematical disposition. Students with positive mathematics dispositions put more effort on mathematics by strategic competency and procedural fluency throughout the learning process [10]. Students may also solve the problem confidently [11-12]. Otherwise, students who has negative mathematics disposition, would reduce their motivation to participate in mathematics task [13-14]

Research results showed that Kahoot can increased the interest of student in the lesson (M=3.1), study with Kahoot become more successful (M=3.04). Kahoot increases student's motivation by being in competition (M=3.08). Students communicate more with others about the topic (M=3.12). Students want Kahoot to be used in other lessons (M=3.2). Using Kahoot on a smartphone made the students feel happier (M=3.2). Rewads can motivate students to learn (M=3.04). Kahoot allows students to see their achievement (M=3.08).

Kahoot helped students to understand the topic (M=3.28). Students felt that learning with Kahoot become more fun (M=3.56) and the Kahoot was fun (M=3.28). Students felt that it's important to winning badges through Kahoot (M=3.2).

Kahoot allows the information exchange with friends (M=3.38) and that information can be recalled more easily (M=3.16). Students felt sad when unsuccessful answered the questions (M=3.16) and can improves their reputation when they won the game (M=3.04). If students can answer correctly, it can improve their self-confidence (M=3.2) and increase the ambitious for success (M=3.1). Students felt that Kahoot can increase classroom competition (M=3.24), can increase their speed in answering question (M=3.16), and made they become more successful in the lesson (M=3.28). Sharing the score with others made them feel better (M=3.12). Kahoot helped students to practice time management skills (M=3.4). Difficult topics became more fun with Kahoot (M=3.28) and the will to win increase by Kahoot (M=3.32).

Students also would to used Kahoot in other lesson because they felt more successful (M=3.12). Motivation and interest of students can increase by competitive environment in Kahoot (M=3.48 and M=3.2). Students felt that competition in crowded group work can increased by implement Kahoot (M=3.36) and can increased interest of students in crowded classes (M=3.44).

Table 1 shows that motivation, interest, communication, understanding, will to win, will to success, reputation, self-confidence, ambition for success, competition, time management skills, and feeling of students to learn mathematics enhanced by implement Kahoot in mathematics learning, especially in linear programming classroom. Students also felt that learning mathematics with Kahoot became more successful, therefore students went Kahoot also used in other lesson. Kahoot can changed student's perception who assume that mathematics was boring became mathematics is fun. Previous research found that Kahoot encourages learning and creates a fun and competitive environment [15]. Motivation, interest, communication, etc were indicators of mathematical disposition. From the result, it can state that Kahoot can enhance mathematical disposition.

Other positive side of using Kahoot in learning mathematics are it fast and easy access (students are not required to create an account to access), can be used to review previous lesson content, can be used in many different lesson and different forms of evaluation, including research projects and presentations [16], and can be easily provided through any device (laptop, tablet, android or iOS) with a web browser. The both of academic and psychological aims of this application can be achieved on this platform. Futhermore the application has a positive impact on students, as revealed by the feedback feature. Students report feeling excited when playing Kahoot in the classroom and impatient to connect the game [15].

4. Conclusion

Kahoot has a positive effect in student motivation and interest. Communication with others can grow up. Using a smartphone can changes feeling of students become positive and can build wiling to be used in other lessons. Using Kahoot on a smartphone made the students feel happier. Rewads can motivate students to learn. Kahoot allows students to see their achievement. Kahoot helped students to understand the topic. Students felt that learning with Kahoot become more fun and the Kahoot was fun. Students felt that it's important to winning badges through Kahoot.

Kahoot allows the information exchange with friends and that information can be recalled more easily. Students felt sad when unsuccessful answered the questions they won the game. If students can answer correctly, it can improve their self-confidence and increase the ambitious for success. Students felt that Kahoot can increase classroom competition, can increase their speed in answering question, and made they become more successful in the lesson. Sharing the score with others made them feel better. Kahoot helped students to practice time management skills. Difficult topics became more fun with Kahoot and the will to win increase by Kahoot.

Students also would to used Kahoot in other lesson because they felt more successful. Motivation and interest of students can increase by competitive environment in Kahoot. Students felt that competition in crowded group work can increased by implement Kahoot and can increased interest of students in crowded classes.

Kahoot can increase the indicators of mathematical disposition. So, it can state that Kahoot can enhance mathematical disposition.

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