



THE EFFECTIVENESS OF CONGKLAK TRADITIONAL GAME TO IMPROVE STUDENTS' LEARNING MOTIVATION IN HUMAN EXCRETION SYSTEM MATERIALS

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Abstract

The research aims to investigate the effectiveness of congklak game media as a learning media that can improve students learning motivation on the chapter of Human Excretion System. This research was conducted by using one group pretest-posttest design that tested on 15 students of VIII class 32 Surabaya State Junior High School. The instruments that used is a questionnaire of student motivation which distributed to students before and after learning using traditional congklak game media and student activity observation sheet which filled by observers during the learning. The results which is obtained from motivation questionnaire can be known that Gain Score on the aspects of attention and satisfaction is 0,4 with medium criteria. While on relevance and satisfaction aspect is 0,3 with medium criteria. Based on students' activity data show that from meeting 1 to 4 students' irrelevant behavior is decrease and students' relevant behavior is increase.. This showed that students are increasingly motivated to do learning. It can be concluded that the traditional game media Congklak effective to increasing student learning motivation.

Keywords: learning media, congklak game, learning motivation

INTRODUCTION

Motivation is one of the factors that influence the learning process (Zhu & Leung, 2011). Motivation can affect the learning effort that will be done by students (Sardiman, 2012). If the motivation for learning is getting higher, the effort to learn and seek knowledge will be more active so that the resulting achievements will be better.

Based on the results of field observations that have been carried out at 32 Surabaya State Junior High School by interviewing one of the science teachers, it can be seen that most junior high school students do not like reading, they will only read if the teacher instructs. The reading activity is also not optimal, there are still many students who read fervently. This is supported by the results of the pre-research questionnaire given to students in the amount of 61% of students who will read science books only in certain situations such as instructed by the teacher or will face tests.

Learning that has a lot of reading and memorization often makes students feel bored. Moreover, according to 32 Surabaya State Junior High School students, science teachers there usually only teach by explaining in front of the class and only using blackboard media. Learning activities like this will create an atmosphere of learning that is centered on the teacher and the interactions that occur between the teacher and students become less good. In addition, this way of learning will make learning boring and students' motivation to follow learning down. Though motivation is one of the keys to achieving good learning outcomes.

Maehr and Midgley (2011) asserted that the responsibility of schools in this case the teacher is to create conditions that can increase students' motivation in actively pursuing academic goals in a predetermined period. A teacher must be able to create an environmental condition that encourages students to learn. These conditions can be created through various methods and strategies so that the atmosphere of the learning process can attract students (Ahmad et al., 2017). One way is to develop learning media in the form of games. The selected game is certainly a game that is able to guide students to better understand ongoing learning in a fun way. For example like doing a learning song in making conclusions. Through learning songs, the teacher can make the classroom atmosphere enjoyable and students can understand and memorize the lessons conveyed easily (Munafifah, 2016). Another type of game that will be applied is the Congklak game which is developed in such a way that is able to increase learning motivation and can help students

understand and memorize the learning delivered by the teacher.

Congklak is one of Indonesia's traditional games. According to the expat.or.id site congklak is not from Indonesia but from other countries that have visited Indonesia when trading. Therefore congklak can be found in various countries with different names. In Arabic, this game is known as Mancala. In Africa the game is called Warri or Awari. In Nigeria, this game is called Adi. In Indonesia itself congklak has a variety of names in accordance with the region. In Java it is known as congklak or dakon, in Sumatra it is known as kongkak, in Sulawesi itanotan, manggaleceng, Anggalacang, and Nogarata (Laelasari, 2017).

In ancient times congklak played by many noble girls. This happened because foreign traders had more contact with the nobility so congklak began to be introduced to them (www.expat.or.id). With the passage of time Congklak can be played by all groups from the nobility to the natives. Congklak is mostly played by girls but boys can also play it.

The existence of the Congklak game in Indonesia is starting to be displaced by the existence of online games that are increasingly mushrooming. Congklak or dakon is included in one of 12 traditional games that are almost extinct (Anonymous, 2017). Therefore, to prevent the game of congklak from becoming extinct, it is necessary to reintroduce to the children that this is a game that is no less exciting with a game based on a gadget. For this reason, in order to revive the nation's tradition, the Congklak game was chosen to be a medium of learning and of course with a lot of development so that it is not only a fun game but also as something that can increase children's knowledge. Congklak game is implemented using the Teams, Games, and Tournaments (TGT) learning model with the implementation of inter-group tournaments at the end of learning so that students are more motivated to learn in order to face the tournament that will take place.

The use of learning media in the form of Congklak games that have been developed in the learning process of the Human Excretion System material is expected to increase students' motivation in learning the material. In this study, it will be discussed about how the effectiveness of the Congklak game media that has been developed in increasing student motivation by using pretest-posttest design.

METHOD

Traditional Congklak Game Development Design

Congklak game developed refers to the traditional Congklak game in general. The part that is developed is the design of the congklak board.

Congklak board design that has been developed consists of 4 large holes with 16 small holes arranged in a rectangular shaped board. Congklak board designs that have been developed can be seen in Figure 2 below. Congklak games are also equipped with cards to help students to deepen the material being studied. The cards provided include question cards, challenge cards, and chance cards. Further development was also carried out on adding game rules to support the implementation of the Congklak game as a learning medium. The rules of the game added are the rules for taking question cards, challenge cards, and chance cards along with the consequences if you have taken one of these cards.

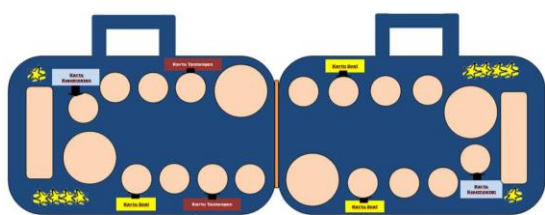


Figure 1. Congklak Board Design

Research Design

The research design used in this study was the pretest-posttest design.

$$O_1 \times O_2$$

Figure 2. One Group Pretest-Posttest Design

Description:

O1: Pretest scores (scores obtained based on student motivation questionnaires that are filled out before being given treatment)

O2: Posttest scores (scores obtained based on student motivation questionnaires filled in after being given treatment)

X: treatment of students (as long as treatment of student activities is observed)

(Sugiyono, 2011)

Research Subjects

The trial was carried out in a limited way at 32 Surabaya State Junior High School. Trial samples taken were 15 students of class VIII.

Research Instruments

The instrument used in this study was a motivational questionnaire using the ARCS model by John Keller (Keller, 2006). The ARCS model used includes 4 aspects namely Attention, Relevance, Conviction, and Satisfaction. The ARCS motivation questionnaire used consisted of 31 statements with 21 positive statements and 10 negative statements. This questionnaire was given

to students before and after students obtained learning by using the Congklak game media.

Other instruments used were student activity observation sheets. This sheet contains some of the student activities that might be carried out in learning. These activities include paying attention to the teacher, reading, expressing opinions, listening to the opinions of other students, working on assignments given by the teacher, asking questions, and irrelevant behavior. Activities carried out by students are observed by observers by checking the statements that correspond to the dominant activities performed by students for 2 minutes.

Data Collection Techniques

Before testing 15 students, students were first given a motivation questionnaire to find out how their initial motivation was. Furthermore, students are given treatment in the form of learning which is carried out as much as 4 meetings. During the learning process the student's activity is continuously observed.

At the first meeting students are still in the stage of introduction about the Human Excretion System. At this meeting the learning model used was discovery learning by giving a task in the form of making mind maps.

At the second meeting the material presented was about the organs that play a role in the excretion system and its structure and function. While at the third meeting the material presented was about disorders that occur in the excretion system along with ways that can be done to maintain the health of the excretion system. At the second and third meetings, the learning model used was the Teams, Games, and Tournaments (TGT) learning model using the developed congklak media. TGT learning at this meeting is still in the learning phase to prepare students for the real tournament at the fourth meeting. At this meeting students are still playing with their own groups.

The last meeting is the fourth meeting, students get the stabilization of concepts that have been obtained in the first to third meeting. Consolidation is done by using the TGT learning model and using congklak game media. At this stage the real tournament is held between the groups to get the best group. Tournament is done by using 4 tournament tables, each tournament table will be filled by 4 students who are representatives of groups 1 to 4. After conducting the tournament students then fill in the motivation questionnaire again to find out the students' motivation after the students take part in learning using the Congklak media.

Data Analysis Technique

Data obtained based on the results of student activity observation sheets will then be analyzed descriptively quantitatively using a percentage of the frequency of occurrence of student activity against all student activities.

Data obtained based on the acquisition of questionnaires will be analyzed using a Likert

scale (Riduwan, 2015). The results obtained from the first and second motivational questionnaires were then performed an N-Gain analysis (Hake, 1999). Furthermore, the normalized N-Gain is interpreted according to the Gain Score criteria (Hake, 1999).

The results of observing student activities can be seen in the Table 1.

RESULTS AND DISCUSSION

Table 1. Observation Results of Student Activities in Learning Using Congklak Game Media

Student Activity	Percentage of Student Activity Against Total Time (%)				Average (%)
	Meeting I	Meeting II	Meeting III	Meeting IV	
Pay attention to the teacher	19	24	29	24	24
Reading	8	7	10	12	9
Express opinions	12	15	12	10	12
Listen to the opinions of other students	8	16	12	16	13
Work on assignments given by the teacher (Performing a congklak game)	30	29	31	31	30
Asking	2	1	1	0	1
Irrelevant behavior	21	7	6	6	10

The results obtained are based on a motivation questionnaire what has been distributed to students is as follows..

Table 2. Increased Student Learning Motivation

Aspect	Score		Gain Score	Criteria
	Before	After		
<i>Attention</i>	3.6	4.0	0.3	Medium
<i>Relevance</i>	3.9	4.2	0.3	Medium
<i>Convidence</i>	3.4	3.9	0.3	Medium
<i>Satisfaction</i>	3.9	4.4	0.3	Medium

Based on table 2 can be seen an increase in student motivation in the aspects of attention and satisfaction by 0.4 with medium criteria. While in the aspect of relevance and satisfaction is equal to

0.3 with medium criteria. The results of increased student motivation can be presented through the box-plot in Figure 3.

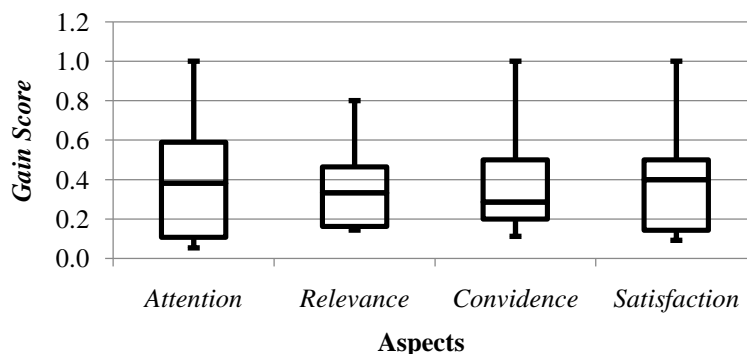


Figure 3. Box-Plot Improving Student Motivation

The results of increased student motivation can be seen in Figure 3. Based on these images it can be seen that all aspects of motivation namely

attention, relevance, evidence, and satisfaction have increased. In the aspect of attention and satisfaction N-gain obtained by 0.4 with medium

criteria. While the relevance and satisfaction aspects of N-gain obtained is equal to 0.3 with medium criteria. The increase in scores obtained from the motivation questionnaire showed that students experienced an increase in motivation in learning science after students received learning by using the Congklak learning media.

The increase in the aspect of attention shows that the level of student attention in the learning process is increasing. Increased relevance shows that the level of student curiosity is increasing. When students find out that learning is being done they need to increase motivation to learn so that those needs can be met. Improvement in the aspect of evidence shows that students are confident in what is obtained during the learning process. If students feel confident with the process undertaken to reach expectations for success then their learning motivation will also be high (Keller, 2000). The last aspect is satisfaction, when students experience an improvement in the satisfaction aspect showing that students are satisfied with the results obtained and they will increase their learning to get that satisfaction back.

Increased motivation in students is also supported by the results of observations of student activities, according to Lumsaden (1994) that when students are motivated they will try hard and will process information or knowledge that they have acquired deeper. In learning, students who are motivated will take actions or activities that are relevant to what is instructed by the teacher. Based on observations of student activities it can be seen that irrelevant behavior carried out by students decreases from meeting one to the fourth meeting with data on the percentage of irrelevant behavior successively from meeting 1 to meeting 4 is 21%, 7%, 6%, and 6%. Thus the relevant behavior of students during learning increases from meeting 1 to meeting 4. Students increasingly pay attention to learning conducted by the teacher. The form of their attention can be seen when teachers explain in front of them listening, when teachers provide opportunities for learning they use the time given to read books that have been provided, and when teachers give assignments to learn while playing congklak they implement it with enthusiasm. Increased student attention as a form of student curiosity because the learning given has a connection with the daily lives of students so that their curiosity is also higher to know the learning that is done. Student confidence in working on questions about learning also increases student attention in the learning process. Students are more eager to do the learning because they can understand the learning done. In addition, the attention of students also increases with the award given. They feel more

satisfied with what has been obtained from learning so as to make them more eager to participate in learning at the next meeting.

Changes in student activities for the better can not be separated from the activities of teachers as instructors. As a teacher the teacher has the role of managing the classroom to create an atmosphere that can motivate students to learn (Ames and Carole, 1992). The atmosphere can be built by selecting and using effective learning strategies and the selection of assignments given to students (Ames etc., 1988).

The strategy used by the teacher in this study is to use the TGT learning model. The TGT learning model is a learning model that uses tournaments as a way to evaluate learning. The implementation of tournaments or competitions combined with games can provide strong motivation for students (Burguillo, 2010). The game that has been chosen is the game of congklak that has been developed. Almost all Indonesian children know and have played Congklak so that in applying it in learning there are no difficulties.

CONCLUSION

Based on the results and discussion, it can be concluded that the Congklak game media has been effective to increasing student motivation. So it can be seen that learning with games can help students to improve their learning motivation. This result is expected to be applied to studies with larger subjects.

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