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## **THE EFFECT OF DOMINO GAME LEARNING MEDIA ON STUDENT LEARNING ACHIEVEMENTS**

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### **Abstract**

This study aims to find out how the effect of domino game learning media on students' learning achievement of class VIII at SMP N 1 Padang, West Sumatera. The methodology of the research which is used in this research is experimental research. The research population was 256 students. The sampling technique used in the research is cluster random sampling, so that the sample acquired was class VIII-E which consisted of 34 students. The techniques of data collection used are documentation and tests. The techniques of data analysis are normality test, homogeneity test, and hypothesis test. Based on the research finding, there is significant effect of using domino game learning media on students' learning achievements of class VIII at SMP N 1 Padang, West Sumatera.

*Keywords: Domino Game Learning Media, Students' Learning Achievement.*

### **1. Introduction**

Social Education is one of the most important elements in increasing of human resources quality in a country. Education is seen in terms of activities in which there is interaction and communication between humans (in this case the teacher and students) that are included in the learning process. The teacher has an important role in the learning process, one of them is as a facilitator of students' learning process (Vhalery and Nofriansyah 2018). The learning process is the active process of students in which they develop their potential. A teacher should encourage the way how his/her student is able to be active in the learning process that takes place (Nofriansyah, Martiah, and Vhalery 2018). Learning must be designed in active, collaborative and independent learning (Richards J. C. & David Bohlke 2011).

An effective learning activity can be recognized if there are various strategies used within, as well the form of methods, models, approaches, and techniques (Manalu, Hutabarat, and Silaban 2017). One of the activities is in the form of games that are designed as learning media. Games in learning are often used as one of the applications in active learning strategies in the form of learning media used by teachers. The media used

by teachers are complementary or teaching aids for the teachers to teach and to help them to understand the subject matter which is conveyed in, so that they obtain good learning achievement, in this case the media has a very important role in learning (Akas 2018). The use of learning media in the learning process can provoke the students' interests and desires, motivate and stimulate the students' to participate of learning activities, and even bring psychological influences to the students (Hermawanti, Nurhadi, and Majid 2018). One of the media games in learning is the domino game.

According to Gough (2015), domino games are very simple and basic sequence of tools that are very flexible so students can play actually with an unlimited number of games with regular space. Domino game learning media is a learning media created by adapting the actual dominoes, the difference of usual domino games is the card games' scores are determined by a circle, while inside of the domino card played contained of some sentences of accounting material economics subjects (Brankaer, Ghesquière, and De Smedt 2015). Based on the research findings conducted by Dalle, Burhanuddin, and Usman (2018) revealed that learning media using domino games is very effective to be used in the learning process. While research conducted by Gough (2015) revealed that through domino games in social studies learning in the classroom students have a tendency to pay more attention to and remember some activities or activities carried out, this arises due to the presence of responses or stimuli to carry out such activities. While research by Abqari, Irawan, and Sa (2018) said that domino card games media have a positive impact on students' mathematics learning, namely students who have skill in counting decimal fractions.

Based on the results of observations conducted by researchers at SMP N 1 Padang, West Sumatera, social science subject teachers have used various learning models that can be applied in class. Besides that, they have also used other vary of learning media, however, domino games have never been applied by the teacher in the learning process in the classroom. Therefore, researchers want to find out how students' learning achievements by using domino game learning media in the learning process.

## **2. Literature Review**

### **Learning Achievement**

Learning is a process of changing behavior as a result of the interaction of individuals with their environment. (Siagian, 2003) Achievement will show feedback from all matters relating to the abilities, expertise, deficiencies, and potential possessed by anyone. Therefore, to determine student achievement, an assessment process or student learning achievement assessment is carried out.

According Sobur (2006), Student learning achievements are the result of changes in ability or behavior that cause learning difficulties. (Sukmadinata, 2005) Learning achievement is the result of the potential abilities possessed by someone that can be seen from the abilities formed from the mastery of knowledge, thinking skills, and motor skills. From some of the above understanding of learning achievement can conclude the learning outcomes produced by students' learning outcomes shown by behavioral changes that discuss cognitive, affective, and psychomotor aspects after studying learning activities.

According Djazari (2011), revealed the learning outcomes issued by several factors both originating from within students (internal) or received from outside themselves (external). Students, attitudes, towards learning, learning motivation, motivation, learning, study habits, interests, and self-study. Factors issued from outside the self (external) discuss the economic situation of parents, infrastructure, education costs, family environment, school environment (peers), community environment.

According Arlianty (2017), internal factors are factors derived from students, for example health, intelligence / intelligence, ways of learning, talents, interests, learning interests, and motivation. While external factors are factors that come from outside learners for example, family, social environment (including peer environment), educator interaction patterns, facilities and infrastructure, learning methods and so on. Many factors affect student achievement. Both factors are within the educational environment (Crosnoe et al. 2004).

## **Games**

A Game is an activity with rules, a goal, and an element of fun. There are two kinds of games: competitive games, in which players or teams race to be the first to reach the goal, and cooperative games, in which players or teams work together towards a common goal (Hadfield, 2008). Games involve many factors: rules, competition, relaxation, and learning, in particular. The main focus of using game in class is to help students learn and have fun. The teacher should decide what game that will be used because there are many kinds of game. According to (Deesri, 2002) teachers should first consider the level of the game to fit their students' language level. They should choose the game that fits the purposes of that class or the content. Moreover, teachers should consider students' characteristics: whether they are old or young, serious-minded or light-hearted, and highly motivated to learn or not. Some games must be adapted in order to fit students' language level, natures, and characteristics. The most important factor is that games should be used when they can give students both fun and educational meaning otherwise they will be a waste of time.

Teachers love game because it makes the actives students in the class, and it has six characteristics.

Those are:

- a) Participant has been given an opportunities and it can be done continuously.
- b) The purpose of game should be clearly stated, consistence and possible to be reached.
- c) Evaluation can be done formally and informally with the understanding that there is trial and error and making mistakes.
- d) There is possibility in making mistakes and it should be forgiven.
- e) All the components of games improve the social interaction ability of participant effectively.
- f) There is should be an amusing activity in order to gain the enjoyment in doing games.

## **Domino Games**

Game Dominoes are a series of popular board games of skill played with tile Dominoes. Dominoes are 7 player game of skill using 50 dominoes where each player gets 7 dominoes at start. The goals in dominoes are to be the first to get the agreed-upon number of points. Steps of Domino Cards Game There are 6 steps in playing Dominoes. Those are:

- a) The teacher gives the instruction how to play the game and explainsthe role how to play the game.
- b) The teacher divides the students into 5 groups, one group consist of sevenstudents.
- c) The teacher gives one set Dominoes to each group and the students should not show their cards to another group.
- d) The teacher asks to each group to shuffle/ mix up the Dominoes and place them all facing down on the table.
- e) Each group matched each picture with the meaning that provided in the domino cards.
- f) The winner is who the person gets rid of all the Dominoes in your hand or if no one can go, then the person with the least Dominoes in their hand is the winner. To make it simple, the teacher re- constructs the winner is the group who can finish in arranging Dominoes fast than the other group.
- g) The teacher asks to each the students to memorize all of the vocabularyin domino cards. Those steps above should be implemented orderly. This game which belongs to competitive one can encourage the students to be active in joining the lesson. Moreover this game can stimulate the students attention to be active in joining the teaching learning process (Yolageldili and Arikan 2011).

## **3. Methods**

This research is an experimental research. The research variable consists of two: dependent and independent variable. Dependent variable (X) refers to domino game learning media, while independent variable (Y) refers to students' learning achievement. This research would be conducted in SMPN 1 Padang,

West Sumatera. The research population is whole classes of VIII (second graders) of SMP N 1 Padang, West Sumatera which consisted of 256 students. The sampling technique used is Cluster Random Sampling, in which the sample obtained was class VIII-E which consisted of 32 students. This research would be conducted about three meetings. The technique of data collection used are documentation and tests. The technique of data analysis are normality test, homogeneity test, and hypothesis test. Further, the percentage of students' score which attained from the observation would be categorized as the students' learning achievements (Riduwan, 2011).

#### 4. Results and Discussion

##### Results

This research was conducted in SMP N 1 Padang, West Sumatera. The test was given to see the students' learning achievements in mastering the materials especially in social sciences. The test had been given twice, namely before giving treatment and after giving treatment (in experimental group). This study used 1 class, namely the experimental class. The research had been conducted for three meetings, with the details: first meeting is pre-test, the second meeting is giving treatment, and the third meeting is conducting post-test by applying domino game learning media in the experimental class.

Before giving the test to the sample, the test (as many as 25 questions) has been tested which are analyzed then for its validity and reliability, and there was about 20 items of questions obtained and used in this research as the instrument to obtain students' achievement. The pre-test was given to determine the initial condition (students' prior knowledge), and after that the post-test by applying domino game learning media in the experimental class was given to determine the influence of domino game learning media on students' learning achievement. Moreover, the observations of this study are the observations that are taken place by fellow of social science subject teachers to researchers who act as a teacher to explain; in other words, the researchers here are actually applying domino game learning media to the experimental class.

**Table 1. Pre-Test Result of Experimental Class**

No	Score	Numbers of Students
1	10	2
2	20	2
3	25	2
4	30	4
5	35	9
6	40	5
7	45	8
8	55	2
	<b>Total</b>	<b>34 students</b>

Source: *Processed research data, 2019.*

Table 1 shows that in the pre-test process there were 2 students who have score 10, 2 students who have score 20, 2 students who have score 25, 4 students who got score 30, 9 students who got score 35, 5 students who got score 40, 8 students who got score 45, and there are about 2 students who got score 55. It can be seen that the foremost score obtained by students was 35 about 9 students, with the lowest score was 10 and the highest one was 55.

**Table 2 The Post-Test Result of Experimental Class**

No	Score	Numbers of Students
1	70	2
2	75	2
3	80	5
4	85	9
5	90	9
6	95	3
7	100	4
	<b>Total</b>	<b>34 students</b>

Source: *Processed research data, 2019.*

Table 2 post test results shows that there are 2 students got score 70, 2 students got score 75, and there are about 5 students who got score 80, 9 students who have score 85, also 9 students who got score 90, 3 students who got score 95, and there are about 4 students who got maximum score (100). Based on the graph, it can be seen that the score 85 and 90 are the foremost score acquired by students, it is about 9 students in each, with the lowest score was 70 and the highest score was 100.

**Table 3. Percentage of Observation Result of Experimental Class**

Percentage	Meeting 1	Meeting 2	Meeting 3
Have been conducted	88,24%	100%	100%
Have not conducted yet	11,76%	-	-
Average	96, 08% (Categorized to excellent)		

Source: *Processed research data, 2019.*

Table 3 shows that the average percentage of observation results which conducted by the researchers, namely observing the using of domino learning media in the experimental class is about 96.08% with a very good category. In the details of the result percentage of the second meeting observations which carried out by the researchers is about 88.24%, and the rest percentage of un-conducted realization is about 11.76%. More specific, in the core activities point-9 the teacher concludes the students' ideas and opinions, and in the closing activities point-2 the teacher gives the explanation of the questions asked by the students, finally in the third meeting, there is about 100% of the observations have been conducted.

## **Discussion**

This research is about the effect of domino game learning media on students' learning achievement at SMP N 1 Padang, West Sumatra. This study aims to examine whether there is a significant effect of the domino learning media game on students' learning achievement on social science subjects at SMP N 1 Padang, West Sumatra. In the implementation of this research, the technique of data collection used here are tests and observations. The learning process was carried out in 3 meetings with details of the first meeting is pre-test, the second meeting is giving treatment by applying the domino game learning media in the experimental class, and the third meeting is post-test.

The test was given to students as research sample, namely class VIII-E as an experimental class which taught by domino game learning media. The test was conducted twice, namely the pre-test and post-test which are aimed to obtain data on student learning achievement before and after applying the domino game learning media in the experimental class.

Based on data on students' learning achievement, in the experimental class 1 with the most pre-test scores obtained by students namely 35 as many as 9 students with the lowest score of 10 and the highest score of 55, and the highest post-test scores obtained by students namely 85 and 90 as many as 9 students in each of the score, with the lowest score 70 and the highest score of 100. Meanwhile, the experimental class 2 with the most pre-test scores obtained by students is 55 as many as 11 students with the lowest score 35 and the highest score 60, and the most post-test scores obtained by students namely 85 as many as 11 students with the lowest score of 70 and the highest score of 100. For overall students' learning achievement after applying the domino game learning media learning, the students' achievement have increased because the applying of learning media the game on students' learning activities, they become more attractive and have better understanding on the materials when playing financial transactions.

Observations used in this research are appropriate with the learning activities which existed in lesson plan (RPP) of the implementation of domino learning media in the experimental class. These observations were carried out by social science economics teachers in class VIII-E by using observation sheet which completed with "Yes" and "No" columns. Further, the teacher can mark the column according to the actions taken by the researchers.

In the domino game learning media of the experimental class, the results obtained were about 96.08%. More details, the percentage result of second meeting observations which have been carried out were about 88.24%, and the rest which have not been conducted yet were about 11.76%. More specific, in the core activities point- 9 the teacher concludes the students' ideas and opinions, and in the closing activities point-2 the teacher explains the questions which are asked students. The point-9 is not implemented because the time is limited, so that the researcher directly come to point-10, namely the teacher concludes the whole of the materials presented in at that time, so that students have better understand the material discussed. The point-2 is not implemented because there were no questions asked by students. Lastly, the third meeting was carried out at 100% (the observations were fully conducted).

Based on the results of the normality and homogeneity test of the data with freedom degree ( $dk = n - 1$ ) and value of significant level of 5% for the normality test of the students' pre-test in the experiment class, namely VIII-E which tested by using the chi-square formula, the results of  $X_{count}$  is smaller or same as  $X_{table}$ ; and the result of post-test,  $X_{count}$  is smaller or same as  $X_{table}$  were obtained, then the data on student learning outcomes which is using domino game learning media in the experimental class were normally distributed. It can be concluded that the pre-test and post-test data for the experimental class are distributed normally. Furthermore, after the normality test was tested, it is followed by the homogeneity test of the pre-test and post- test by using the Bartlett test, here  $X_{count} \leq X_{table}$  or  $0 < 7,815$ , it means the sample was recognized in homogeneous; in other words, it could be continued to the hypothesis test.

The discussion of domino game learning media has a quite and significant effect on students' learning achievement which is seen from the results of the analysis of multiple regression equations that the equation values are as follows:  $\hat{Y} = 6,88 + 0,46 X$ . It can be concluded that  $F_{count}$  is higher than or same as  $F_{table}$ , or  $182,21 \geq 58,9$ , it means  $H_0$  is rejected and  $H_a$  is accepted. In other words, the regression equations are equal to equivalent. Thus, there is an effect between domino game learning media on students' achievement in social science subjects. It shows that each of media effect ( $X$ ) would increase the students' learning

achievement (Y) about 0.46. In other words, that each of increase in one score of variable X causes an increase in the variable Y by an average of 0.46 in the constant value of 6.88. The value of the domino game learning media contribution is 92.16%. It means that the magnitude of the effect of using domino game learning media on students' learning achievement is about 92.16%, and 7.84% is influenced by other factors.

## **5. Conclusion**

Based on the research conducted, research findings and discussions above, it can be concluded that there is an effect of learning media on students' learning achievement on social science subjects in class VIII-E of SMP N 1 Padang, West Sumatera. Domino learning games media can be one of the learning media that can be used by teachers to improve students' learning achievement. There were some obstacles of the use of domino game learning media in the experimental class, when applied to the students; one of them is when applying the media in the first time, the students had to have mastered the material first.

Based on the conclusion above, it is suggested to the teachers who would apply the domino game learning media, it is better for the teachers to guide the students in using game media and give them better understanding on the conveyed materials before the applying this media.

## **References**

- Abqari, Firman Tsabbit, Edy Bambang Irawan, and Cholis Sa. 2018. "Media Permainan Kartu Domino Untuk Meningkatkan Keterampilan Berhitung Konversi Pecahan Desimal Siswa Kelas IV.": 1190–99.
- Akas, Özgür. 2018. "Seen with Other Eyes: A Service Learning Project for High School Mathematicians Working with Visually Impaired Learners." *Journal of Humanistic Mathematics* 8(1): 289–300.
- Arlianty, Widinda Normalia. 2017. "An Analysis of Interest in Students Learning of Physical Chemistry Experiment Using Scientific Approach." 1(2): 109–16.
- Brankaer, Carmen, Pol Ghesquière, and Bert De Smedt. 2015. "The Effect of a Numerical Domino Game on Numerical Magnitude Processing in Children with Mild Intellectual Disabilities." *Mind, Brain, and Education* 9(1): 29–39.
- Crosnoe, Robert, Monica Kirkpatrick Johnson, Glen H Elder, and North Carolina. 2004. "School Size and the Interpersonal Side of Education: An Examination of Race / Ethnicity and Organizational Context N." 85(5).
- Dalle, Ambo, Burhanuddin, and Misnawaty Usman. 2018. "The Effectiveness of Domino Card Games to Improve German Language Vocabulary." *Journal of Physics: Conference Series* 1028(1).
- Deesri, Angkana. 2002. "Games in the ESL and EFL Class." *The Internet TESL Journal* Vol VIII N.
- Djazari. 2011. "Evaluasi Prestasi Belajar Mahasiswa Program Kelanjutan Studi Jurusan Akuntansi Di Tinjau Dari IPK." *Journal Pendidikan Akuntansi Indonesia*.
- Gough, John. 2015. "With Stimulating Mathematical Thinking through Domino Games Domino Games Bug Trails : A Non-Standard Domino Game Bendominoes : Dominoes with a Twist !" 71(2): 20–22.
- Hadfield. 2008. *Introduction to Teaching English*. Oxford: Oxford University. Press
- Hermawanti, Medita, Mukhamad Nurhadi, and Abdul Majid. 2018. "Pengembangan Perangkat Pembelajaran Interaktif Kimia Menggunakan Media Chemical Domino Ditinjau Dari Aktivitas Dan Hasil Belajar Siswa Kelas X Sma Samarinda

- Development of Interactive Chemistry Learning Devices Using Domino Chemical Media in Terms of Stud.” 3(2): 63–72.
- Manalu, Herbert C B, Wesly Hutabarat, and Saronom Silaban. 2017. “The Development of Cooperative Learning Model Type Teams Games Tournament (TGT) Integrated on Scientific Approach ( Subject : The Periodic System of Elements ).” : 9–10.
- Nofriansyah, Anisa Martiah, and Rendika Vhalery. 2018. “The Effect Of Learning Model Logan Avenue Problem Solving Heuristic To The Student’s Learning Activity.” *International Journal of Scientific and Research Publications* 8(10): 279–86.
- Richards J. C. & David Bohlke. 2011. *Creating Effective Language Lessons* Creating Effective Language Lessons.
- Siagian, Sondang. 2003. *Manajemen Sumber Daya Manusia*. Jakarta: PT. Bumi Aksara. Sobur. 2006. *Psikologi Umum*. Bandung: PT. Pustaka Setia.
- Sukmadinata, Nana. 2005. *Landasan Psikologi Proses Pendidikan*. Bandung: PT. Remaja Rosdakarya. Vhalery, Rendika, and - Nofriansyah. 2018. “Cooperative Learning in the Learning Activity of Students.” *International Journal of Scientific and Research Publications (IJSRP)* 8(9): 62.
- Yolageldili, G, and A. Arian. 2011. “Effectiveness of Using Games in Teaching.” *Ilkogretim Online*: 10 (1).