THE INFLUENCE OF MODEL A DEMONSTRATION INTERACTIVE WITH MEDIA PROPS AGAINST THE CRITICAL THINKING SKILLS AND LEARNING MOTIVATION OF HIGH SCHOOL STUDENTS

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Article Info	*Abstract*
	The research was conducted in SMA Negeri 2 Kotabumi North Lampung District school year 2017/2018. This study aims to Determine how much influence the use of Interactive Demonstration models with medi props against critical thinking skills and learning motivation grade XI. This type of research is quantitative research methodsExperimental quasy design.The population in this study is a class XI IPA 1 and XI IPA 2, means of the data collection in the form of tests, non-test, and documentation.Based on the results Obtained by the achievement for the critical thinking skills of the experimental class average value (79), while the control class average value (67). For motivation to learn Obtained experimental class props percentage (86%) while the percentage for the class gained control of (77%). Based on correlation test of significance of 0.009> 0.05, then there is a significant correlation. The results Showed that the effect of the media aided Interactive Demonstration models props significant effect on critical thinking skills and learning motivation.

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INTRODUCTION

National education goals is the formulation of the quality of learners that should be developed by each educational unit. By because the formulation of the national education goals be fundamental in the development of the nation's character education, including in the subjects of biology. In line with national educational goals, learning objectives, namely high-school biology students are able to develop analytical thinking skills, inductive, deductiveusing concepts and principles of biology. (Depdiknas, 2013).

Skills that are developed today is the high level thinking skills (higher order thinking). High-level thinking skills is an ability to think that not only requires the ability to remember, but requires capabilities that are higher, such as creative thinking skills, critical, problem solving, and decision-making. (Sumarni*et al.*, 2013).

This is reinforced by the opinions of Anderson, someone who has the skills of critical thinking will tend to seek the truth, divergent thinking (open and tolerant of new ideas), to analyze the problem properly, think systematically, inquisitive, mature in thinking and can think independently. (Anderson, 2003).

Motivation as an important factor in learning activities, students who have the motivation to learn tend to devote all its capabilities to achieve optimal learning results so as expected, a high learning motivation will determine the intensity of the effort to learn owned by students, such as trains perseverance and tenacity in the face of adversity, and to cultivate a passion and desire to succeed, with a high learning motivation in learning the critical thinking skills will develop optimally. (Karunia, 2014).

Based on the results of pre-study the problems currently faced in SMAN 2 Kotabumi North Lampung is the lack of critical thinking skills of students of some subject matter of biology, especially in solving problems or tasks set by the teacher. This is shown by the answers of learners who are less varied, learners also have not been able to answer seamlessly questions and attitudes of students in teacher

pesetas dependence makes most learners ask teachers give an example first so that they can do about it. This indicates that the critical thinking skills and motivation of learners is still lacking. (Ramajid, 2017).

Seeing the lack of motivation to learn and critical thinking skills in problem solving, we can know that the learning process has not provided treatments as well as an emphasis on critical thinking skills. This affects the value of critical thinking skills learners acquired the following is the value of critical thinking skills of students in the subjects of biology:

Table 1. List value critical thinking skills student class XI science

Class	The number of students	Criteria for critical thinking		
		High	Moderate	Low
XI IPA 1	37	8 students	10 students	19 students
XI IPA 2	37	7 students	9 students	21 students

Source: Documents the value of critical thinking skills biology students grade XI in high school N 2 Kotabumi North Lampung year lessons2016/2017.

Of the 37 students of class XI Science 1 only 8 students had high critical thinkin skills 12 students currently, and 18 students have to think critically low. For 37 students of class XI IPA 2 only 7 students yan has a high critical thinking, 9 students were, and 23 students have to think critically low.

This is supported also by the results of learning motivation questionnaire distributed to 74 learners, here is the result of learning motivation questionnaire in Table 2.

Of the 37 students of class XI Science 1 only seven students had high motivation to learn, twelve had moderate learning motivation, and eighteen students had low learning motivation.For 37 students of class XI IPA 2 only 4 students have motivation to learn high-yan, 10 students were, and 23 students have low learning motivation.

Table 2. Result Student Motivation Questionnaire Class XI IPA IPA 1 AND 2 SMA N 2 Kotabumi North Lampung

Class	The number of students	Motivation to learn		
		High	Moderate	Low
XI IPA 1	37	7 students	12 students	18 students
XI IPA 2	37	4 students	10 students	23 students

Source: learning motivation questionnaire class XI IPA 1 and XI IPA 2 SMA N 2 Kotabumi North Lampung T. P 2016/2017.

To overcome these problems required a learning model that provides an opportunity to students to motivate learning and critical thinking skills to solve a problem.Afdal (2016) declare that the model Demonstration Interactive using the demonstration can clarify an understanding or to demonstrate how to do something to the students in a way demonstrating goods, events, rules, order, perform something of activities, either directly or through the use of teaching aids relevant to the subject or material that is being presented so that learners can be easy to learn and the learning process will be achieved to the maximum.

Referring to the opinion (Widiatmoko, 2003) states that the biological study using props more effective in achieving the learning objectives that have been set as compared to without the use of props. Props is an intermediary or messenger learning. Learning to use props means optimizing the functioning of the entire sensory learners to improve the effectiveness of learning in a way to hear, see, feel, and use his mind in a logical and realistic.

Based on some of the above descriptions, behind the authors conducted a study aimed to determine the "Effect of media-aided Interactive Demonstration models props against critical thinking skills and learning motivation of high school students".

METHODS

This type of research is quasy experimental design. Researchers used an experimental research methods for researchers will be looking for the effect of treatment specific. Research has been conducted in SMA N 2 Kotabumi North Lampung in July-August 2017 semester 2017/2018 academic year.The subjects were students of class XI SMA N 2 Kotabumi academic year 2017/2018. The sample used is class XI IPA 1 (37 students) as an experimental class were given (treatment application of media-aided demonstration model interkatif props) and XI IPA2 (37 students) as the control class (teaching mind mapping).

The research instrument consists of 22 items keteramplan essay critical thinking and 20 item questionnaire motivation to learn. Aspect measured knowledge is knowledge of cell material which consists of 3 sub-material ie cells, plasma membrane, and membrane transport. While aspects of motivation measured competence consists of four indicators of competence motivation to learn is the attitude towards learning, consistency in learning, persistence in learning, and Achievement in learning.

Methods of data collection is done, among others such tests, non-test, and documentation. The results of the research was analyzed statistically by a test of the value of the post-test students. Tests carried out in the form of normality test, homogeneity, and statistical tests such as t test (Independent Sample T Test)with SPSS 16.0, hypothesis test used to test the assumptions of the study. Statistical test results for value-assisted learning model Interactive Demonstration media props of post-test critical thinking skills and motivation to learn.Ho: critical thinking skills and learning motivation of students before and after the learning is the same. Ha: critical thinking skills and learning motivation of students before and after the learning is not the same.Criteria for decision-making based on a probability value is obtained. If the significance value sig. > 0.05 then Ho is accepted and Ha rejected. If the significance value sig <0.05 then Ha Ho accepted and rejected.

RESULTS AND DISCUSSION

Students Critical Thinking Skills

Analysis of students' critical thinking skills using data obtained from the results of the post-test students. Analysis conducted to test the hypothesis, starting from knowing the normality data first then understanding the homegeneity of critical thinking data and then through the Independent Sample T Test. Data critical thinking skills students experiment class and control class obtained normal distribution then do further data analysis homogeneity test Kolmogorov-Smirnov visible output probability for an experimental class and control class is 0.120 while α = (0.05), the significant value of the experimental class and control class> 0.05 can be concluded that the experimental class and control class received or both of these data homogeneous.

Further data analysis using parametric analysis. Analysis of the data showed that the students' critical thinking skills and classroom experiments significant control. It can be seen from the t test critical thinking skills. Data are presented in Table 3.

Table 3. T Test Critical Thinking Skills and Motivation

	Levene's Test for Equality of Variances	*t-test* for Equality of Means Sig. (2-tailed)
Ekx. Critical thinking skills	Equal variances assumed	.000
Control. Critical thinking skills	Equal variances not assumed	.000

Source: results of independent t test calculation of critical thinking skills.

Table 3 shows that generated a significant level of 0.000> 0.05, Then Ho is rejected and Ha accepted. This meansthere is a difference between the experimental class with a grade control for critical thinking skills. These results showed that the students' critical thinking skills experimental class is higher than the control class, this was due to an experimental class that implements interactive demonstration model of media-aided learning tools.

Their interactive demonstration model used may give different results by learning that do not implement interactive demonstration model. Interactive demnonstrasi models have three stages, namely Predict learning, experience, reflect, (Komang, 2012). Interactive demnonstrasi stage in the model can make students more interested in participating in learning activities and provide more meaningful learning so that students can absorb and remember the material presented by the teacher to the maximum. Help props media also affect the results, the media props right tools to deliver the cell material,plasma membrane, and the membrane transportwith a variety of features in it to make students more interested in participating in learning activities and make it easier to remember the material presented by the teacher.

For the analysis of secondary data is also critical thinking skills to analyze the results of classical completeness. The data used are the result of the value of critical thinking before being given treatment, sheet student discussion, and post-test. Analysis of classical critical thinking skills aimed to find out how much the students who completed and uncompleted. Minimum completeness criteria used in SMA 2 Kotabumi of 80. Determination of mastery not only of the results of the post-test alone but the process of a complete learning activities. The use value before treatment and a discussion sheet value students to more fully determine the thoroughness of all the values that students get. Data are presented in Table 4.

Table 4. The Results of Classical Completeness Critical Thinking Skills Experimental Class And Control Class

Class	The number of students			Peresentase	
	Average	Complete	Not Completed	Complete	Not Completed
Experiment	79	28	8	78%	22%
Control	67	18	18	50%	50%

Sources: Documents the value of clasicalcritical thinking skills biology students grade XI semester in high school N 2 Kotabumi North Lampung TP 2016/2017.

Differences in these results indicated the presence of interactive demonstration model which is used to grade students' critical thinking skills of the experiment. Experimental class got different treatment to control class which only apply learning mind mapping. Besides the influence of the media is more interesting props make students more enthusiastic and keen to learn and understand the main content of the material presented. (Azhar, 2016) in his research also states that there is a difference between learning media use props to the learning outcomes of students.

Dlists are value critical thinking skills students experiment class and control class:

Table 5. Result Value Critical Thinking skills of Grade XI IPA 1 and XI IPA 2

Class	The number of students	Criteria for critical thinking		
		High	moderate	Low
XI IPA 1	36	20 students	13 students	3 students
XI IPA 2	36	6 students	21 students	9 students

Source: Documents the value of critical thinking skills biology students grade XI semester in high school N 2 Kotabumi North Lampung TP 2016/2017.

Table 5 shows the experimental class (XI IPA 1) shows that the interval is very critical to reach 56% gained 20 students, interval critical (was) reached 36% obtained 13 pupils and 3 students with less critical criteria In the control group only 6 students have high critical thinking skills and 21 students are of the moderate category, up to 9 low critical thinking skills

Percentage and less critical of students using the learning model mind mapping has not reached 50% of the total number of students into the percentage is very critical (high). so that it can be concluded that the use of the learning model Interactive Demonstration media aided propsagainst the influence of critical thinking skills in learning biology.

The Learning Motivation Of Students

Analysis of students 'motivation to use the data obtained from the students' learning motivation questionnaire. Students 'motivation is drawn from students' motivation esearchers students' motivation value includes four aspects: Attitude toward learning, consistency in learning, persistence in learning, and achievement in learning. Researchers assessed in two meetings the value obtained from the students' motivation in the form of a score from one to five (Cucu Suhana, 2014).

Analysis of students' motivation to use the data obtained from the student questionnaire. Analysis conducted to test the hypothesis, starting from knowing the normality of the data first and then analyzed further. Normality test is done by using the value of the post-test results of experimental class learning motivation questionnaire and grade control. Based on the resultsnormality test with SPSS 16.0 Kolmogorov-Smirnov visible output probability for an experimental class and control class is 0.175 and 0.200 while α= (0.05), the significant value of the experimental class and control class> 0.05 can be concluded that the experimental class and control class received or both of these data were normally distributed. Analisis further data homogeneity testKolmogorov-Smirnov visible output probability for an experimental class and control class is 0.273 while α = (0.05), the significant value of the experimental class and control class> 0.05 can be concluded that the experimental class and control class received or both of these data homogeneous.

Further data analysis using parametric analysis. Analysis of the data showed that the students' motivation experimental class and control class significantly. It can be seen from the t test students' motivation. Data are presented in Table 5.

Table 5. T test Student Motivation

	Levene's Test for Equality of Variances	t-test for Equality of Means Sig. (2-tailed)
Ex. Motivation to learn	Equal variances assumed	.000
Control. Motivation to learn	Equal variances not assumed	.000

Source: results of independent t test calculation of student motivation.

There is a difference between the experimental class control class with student motivation, these results indicate that the students' learning motivation of the experimental class, is higher than the control class, this was due to an experimental class that implements interactive demonstration model of media-aided teaching aids make students become more active and motivated. It is also found experimental class average increase was higher than the control class. The results of the data analysis of students' motivation by category is shown in Figure 1.
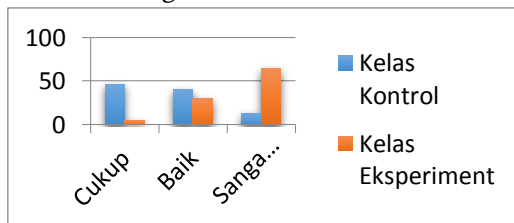
Figure 1. Final Score grouping Motivation Questionnaire Experiment Class and Class Controls.

Source: final score gruping motivation biology students grade XI semester in high school N 2 Kotabumi North Lampung TP 2016/2017.

Based on the diagram known in the control class learners in pembelajaranya using model mind mapping is not successful because the students who get the criteria of motivation to learn very well just get a percentage of 13% has not reached 50% of the students in the control class, to kiteria motivation to learn better as many as 15 (41%) of learners and learning motivation enough criteria were 17 students

(46%). So it can be concluded Mind Mapping learning model is not optimally increase students' motivation. In the experimental class of learners can be said there is an increasing use Interactive Demonstrations learning model with media props against criteria karen learning motivation motivation to learn very well in the experimental class there are 24 students (65%),This is consistent with previous studies that Interactive Demonstration models can increase students' motivation (Komang, 2012). addition, the results of classical completeness dianalisisnya students' motivation experimental class and control class presented in Table 6.

Table 6. Results Of Classical CompletenessMotivation To Learn Experimental Class And Control Class

Class	The number of students			Peresentase	
	Avera ge	comp lete	not Comple ted	comple te	not Comple ted
Experiment	86	34	2	95%	5%
Control	77	20	16	54%	46%

Source: Documents the value of clasical completeness motivation biology students grade XI semester in high school N 2 Kotabumi North Lampung TP 2016/2017.

Differences in these results indicated the presence of interactive demonstration model used on the students motivation experimental class. Experimental class got different treatment to control class which only apply learning mind mapping. Besides the influence of the media is more interesting props make students more enthusiastic and motivated to learn and understand the main content of the material presented (Saiful, 2006) in his research also states that there is a difference between the use ofvaried learning methods and models to increase the motivation of learners.

The results of students' learning motivation questionnaire XI IPA 1 and XI IPA 2 are presented in Table 7.

Table 7. Student Motivation Questionnaire Results of Class XI IPA 1 and XI IPA 2

Class	The number of students	Student's motivation to study		
		High	moderate	Low
XI IPA 1	36	24 students	10 students	2 students
XI IPA 2	36	4 students	15 students	7 students

Source: Documents the value of motivation study biology students grade XI semester in high school N 2 Kotabumi North Lampung TP 2016/2017.

Table 7 shows the experimental class (XI Science 1) motivation interval (high) obtained by 24 students, motivation interval (moderate) obtained by 10 students and students who have motivation (low) totaling 2, this increases learning motivation by 56% (medium category) compared to previous learning motivations before given interactive demonstration model. In the control class only four students (13%) who experienced learning motivation high and 15 students (41%) category is, for 17 students into lower percentage (46%). So the use of the learning model Interactive Demonstrationmedia aided propsto influence learning motivation in learning biology.

Based on research that has been done, there is the result of biology learning material of cells by using a model demonsterasi interactive aided media props against critical thinking skills as follows: (1) Providing simple explanation, for the result is that students can create temporary answer (hypothesis) on the question of descriptive and causal given by identifying, analyzing argumentslearners think to read and translate an opinion, (2) Provide further explanation, the students in the the experimental class very well identifies terms (3) students present their findings and provide explanations for the observed cases, and (4) strategies and tactics, students can decide on actions to consider solutions.

Based on the research that has been done, there are learning outcomes biological cell material using a model of media-assisted interactive demonsterasi props on the students motivation as follows: (1) Attitude toward learning,Attitudes are grown learners to learn to make learning more alive and active in learning activities that peseta students can find answers to questions yang filed, (2)Consistent in learning,consistency in very good learners to follow learning nets from beginning to end because participants wanted to prove the answer while students in solving a problem, resulting in phase with the findings predict that there is a learning phase at the end of reflex, (3) Persistence in learning, the experimental class enthusiasm and motivation of learners in the learning process following the very spirit and attentive, giving rise to a two-way communication between teachers and learners, making the activity more active learning and life, (4) Achievement in the study, making learners The move, motivated and act to meet the needs that will achieve the desired goals.

CONCLUSION

Based on the results of research and discussion, we can conclude that the use of models Interactive Demonstration positive effect on critical thinking skills and learning motivation of high school students in class XI on the theme of the cell. Critical thinking skills learning outcomes and student motivation increases with the criteria of a modest increase of 55% and 56%. T test results showed that the media-assisted interactive demonstration model props affect the outcome of critical thinking skills and student motivation. Thus, the media-aided Interactive demonstration models of props can be used in learning that the cell material and the critical thinking skills to increase student motivation.

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