



The Implementation of Role Playing to Improve Students' Cognitive Activities and Learning Outcomes on Excretion System in SMPN 1 Batang

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Abstract

The purpose of this study is to describe the effect of *role playing* on the students' activity and the cognitive achievement in the material excretory system in SMPN 1 Batang. The population was half of second class VIII SMP N 1 Batang and the sample are used students of class VIII A and VIII E. The study Design was pre-experimental design from of pretest-posttest control group design. The results showed that the implementation of *role playing* in learning excretory system can increase the activity and cognitive learning outcomes. The result of the increase was gotten in using t-test. The result that value probability (sig.) <0.05 then Ho is rejected and Ha accepted. Means that there are differences in cognitive learning outcomes significantly between the control and the experimental class. Results obtained from the data that there is significant difference between the results before and after treatment (pretest-posttest). In addition, there is an n-gain test conducted to determine whether there is a difference in the results of pretest, posttest and N-gain between the experimental class and the control class. Based on the test results of N-gain, increased cognitive achievement experimental class (VIII A) amounted to 0.633 (moderate) and grade control (VIII E) 0.32 (moderate). The activity of students in class VIII A of 82.27% (very active) and VIII E amounted to 75.50% (Active). This indicates that the use of *role playing* method can increase the activity and cognitive learning outcomes of students.

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INTRODUCTION

One of the main problems in learning in school today is the low absorptive capacity of students as evidenced by the average - average student learning outcomes are always under KKM. The learning method is shown by the teacher more dominated by teachers, so students tend to be passive and not given access to develop independently. This illustrates that the process of learning that takes place is not optimal. During the learning process, teachers are still often use the lecture method. The lecture method is a way of conveying the material to the students who conducted orally. The weakness of the lecture method is tedious, students are not active, the information is only in one direction, feed back is relatively low, patronizing and tedious, less attached to the memory of the student, less controllable in both time and materials, monotonous, do not develop the creativity of students, making students only as the object of learners , does not stimulate students to read (Zaini& Aryan, 2008).

Based on observations and interviews with teachers of Biology at SMP Negeri 1 Batang obtained information that the learning conditions are still in progress in one direction because teachers still often use the lecture method and less using a variety of learning methods. Although the lecture is the method most often criticized from all methods of teaching, this method remains the most commonly used (Eggen & Kaucha, 2012). This is because teachers feel less time to hold a variety of learning in materials science. However, teachers are aware that the method used is boring for students.

Based on the results UAS academic year 2017/2018 Semester 1 in SMP Negeri 1 Batang, the average value of UAS IPA is 68.3 with KKM IPA ≥ 75 . Of the 218 students only 33 students are equal / above the KKM. If improved only 15% of students who graduated in science subjects. To overcome the problem in biology learning as described above, the teacher should implement more varied teaching methods. It is necessary to develop a form or method of learning a fun, student-centered and able to increase the active role of students in biology, especially on the material excretory system. According to Ibu Siti Qomsiyah, biological materials excretory system is a difficult matter for students, especially in the renal excretory system section. Students are difficult to distinguish the stages that exist in the process of renal excretion.

Under Annex Permen Dikbud No 68 th 2013 KI and KD excretory system is material to learn about the structure and function of human excretion system and its application in maintaining personal hygiene (Kemendikbud, 2014). Therefore it is necessary joyful learning are able to raise students' motivation and enthusiasm that activity and high student learning outcomes. One strategy that can be applied to raise students' motivation and morale are using *Role playing*.

Role playing or play the role of a kind of motion games in which there are goals, rules, and edutainment. *Role playing* is a way of mastering learning materials through the development of imagination and appreciation of students (Huda, 2013). *Role playing* is a method of learning as part of the simulation that is directed to scrutinize historical events, create actual events, or events that may arise in the future (Majid, 2015). The method of *role playing* is also able to increase the activity and learning outcomes (Rosada, 2016). The method of *role playing* is also able to improve student learning outcomes with a very significant (Purwoko, 2015).

Based on this background, it is necessary to study with the title "*Role playing* Implementation Method To Improve Cognitive Activities and Learning Outcomes Students On Content System Excretion At SMPN 1 Batang".

RESEARCH METHOD

The research was conducted in the second semester of the academic year 2017/2018 and located in SMP Negeri 1 Batang. The population in this study were all students of class VIII SMP Negeri 1 Batang in the academic year 2017/2018. The sample used is class VIII A (Class Experiment)

and VIII E (Class Control) are selected using cluster random sampling technique. The design used is true experimental design. This research is experimental research design *quasi-Experimental* with Non Equivalent form pretest-posttest design. The variables in this study are independent variables and dependent variables. The independent variable in this study is the learning method, namely Role playing for the experimental class and the lecture learning method for the control class.

The dependent variable in this study is the activity and cognitive learning outcomes of students. The methods of collecting data are: observation, test, questionnaire, and interview. Observation is used to overcome data concerning students' activity, test is used to measure students' learning outcomes.

RESULTS AND DISCUSSION

Cognitive Learning Outcomes Data Analysis Students

The purpose of this study was to determine the effectiveness of the method of *role playing* on students' cognitive learning outcomes. Cognitive learning outcome assessment is done based on the pretest and posttest that has been done during the study. The learning result is the result obtained by the student in the learning process as an illustration of the ability of the student (Novilia, et al., 2016).

Table 1 Data Value pretest and posttest results for Cognitive Learning Classroom Experiment (Methods *role playing*)

Treatment	Rated	lowest Rated	Average
<i>Pretest</i>	63.33	20	43.79
<i>posttest</i>	90	66.66	80.36

Table 2 Data Value pretest and posttest results for Learning Cognitive Control Class (lecture method)

Treatment	Rated	lowest Rated	Average
<i>Pretest</i>	73.33	36.66	49.81
<i>posttest</i>	96.66	46.66	69.99

In the control class there was an increase but only slightly and different from the increase in the experimental class. This is because students focus more on role playing activities than reading material in textbooks and LKS, besides that some students are not really working on LKS, not only that students also rarely open books and study outside science hours, the information is obtained from students themselves. Although the enhancements are included in the medium criteria, this research can prove that the role playing method can improve students' cognitive learning outcomes. Cognitive learning outcomes A class VIII student in this study increased.

This increase occurred because there is an increasing one indicator of student activity when playing *role playing*. Application of the method of *role playing* make students become more active. When students are given a script, students will learn the script in accordance with their respective roles. Furthermore, students will practice with friends in the group at the meeting. Before practicing, the students will discuss for the division of roles so that there are interactions that arise in the group. At the time of playing role-playing students who are not on duty will pay attention to the presentation of the group going forward. Students also work in the LDS LDS where the question is related to the presentation of the group going forward. After that, the students discuss in groups and in the classroom. At the time of studying texts students will be given the *role playing* deeper material, students will learn about their own with the help of a teacher. In this case, the teacher's role as facilitator. When

students studied the script of *role playing*, of course students will better understand and remember the material being studied. Compared to a lecture from the teacher.

According Sasomo (2015) in his research titled implementation approach saitifk by the method of *role playing* on learning curriculum in 2013 to facilitate individual assessment explained that based on the results of the calculation hypothesis test using t test obtained conclusion the learning method of *role playing* combined with the approach of scientific obtain educational achievement better than the class taught by lecture method or direct learning.

Test N-Gain

Improved cognitive achievement of students supported by N-gain test. Results from testing students' cognitive learning outcome based on data pretest and posttest can be seen Table 3.

Table 3 Test Results N-gain

Class	Pretest	Posttest	The average N-gain	Criteria
Class VIII A (Experiment)	43.79	80.36	0.63	Moderate
Class VIII E (Control)	49.81	69.99	0.32	Moderate

Table 4 Independent Samples T-Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	T	Df	Sig. (2- tailed)	mean Difference	Std. error Differenc e	95% Confidence Interval of the Difference	
									Lower	Upper
value	Equal variances assumed	16.611	.000	4,611	70	.000	10.36917	2.24890	5.88387	14.85446
	Equal variances not assumed			4,611	52 554	.000	10.36917	2.24890	5.85754	14.88079

Based on these data, the result that value probability (sig.) <0.05 then Ho is rejected and Ha accepted. Means that there are differences in cognitive learning outcomes significantly between the control and the experimental class class.

Exhaustiveness Student

Classical completeness is used to test whether the student learning outcomes in learning excretory system through the method of *role playing* classical completeness achieve at least 80% of the

total number of students reached the school KKM is 75. Mastery learning students obtained from posttest value and the value of LDS.

Table 5 Data mastery learning graders

No.	Completed / not Completed	Class VIII A		Class VIII E	
		number	percentage	Number	percentage
1.	complete	33	92%	18	50%
2.	not Completed	3	8%	18	50%

Based on the criteria of classical completeness be concluded that the class VIII A has reached completeness klasikan with a percentage of 92%, while the percentage of students who pass class VIII E by 50% and therefore has not reached the classical completeness. This is in line with the opinions Sudjana (2008) which states that the events or analogical processes which appear in the role-playing method will be easier for students to understand the process or the actual events that can not be observed directly. Djamarah and Zain (2002) mentions one of the advantages of the methods of *role playing (role playing)* are students trained himself to understand and remember the content of the material to be play.

Activities of students in learning

Student activity data obtained from observations made with the observation sheet. The activity data used to determine the active role of students during the learning process which is observed during the four meetings are presented in Table 6.

Table 6 Student activity VIII A and VIII E when the teacher explains and discussion groups

class	Activities to-student at the meeting (%)				Average Student activity	criteria
	1	2	3	4		
VIII A	79.22	84.22	82	83.63	82.3	very active
VIII E	74.97	74.47	76.16	76.41	75.50	active

Based on Table 6 the percentage of class VIII A student activity during the learning by using *role playing* has increased with the criteria very active. While the percentage of eighth graders liveliness E for learning by using the lecture method slightly increased with active criteria. The results of observations of students in learning activities are presented in Table 7. Research concluded that the experimental class increased activity of students at the meeting of the two, while at a meeting of the decreased activity of students when compared with the second meeting. While at the meeting of four an increase when compared to the third meeting. Very high increase in the second meeting occurred because the materials at the meeting was very little and students more enthusiastic in learning compared with attendance of one, three, and four. The average of the 4 meeting showed that the activity of class VIII A included in the criteria is very active. In the experiment there was a slight grade students peningkata activity of each meeting. The average of the 4 meeting showed that the activity of class VIII E included in the active criteria.

Activities of students in doing *role playing*

Data activity of students in doing *role playing* was obtained from the observation when students play *role playing* using student activity observation sheet. The results of the student activity observation in class VIII A can be seen in Table 8.

Based on Table 7 average student activity when playing *role playing* fall into the category of very active with a percentage of 85.37%. Only two children are enough Akif in the learning. This means the application of the method of *role playing* on the material excretory system in SMP N 1 Batang positive effect for achieving the indicators 7 5% of students active. According Ngabekti et al. (2006) when the learning is done in groups can require students to work to complete a task together and motivate student learning, so that students actively in learning. Accordingly, the research conducted by the Haq et al. (2014) reveal that learning with *role playing* method can increase students' activity for students to play while learning and working together to solve the problem so that the classroom atmosphere more lively and fun.

Table 7 Summary of activity A class VIII when playing *role playing*

Criteria for Student Activities	The number of students	Percentage (%)
Not active	0	0
Less active	0	0
quite active	2	5.56%
Active	7	19.44%
very active	27	75%
The number of students	36	
Average	85.37%	
Category	very active	

Student’s feedback

The results of observations of students' responses to learning by using the role playing method on the excretory system material received a positive response. Many students are interested in the role playing method in learning excretion system material. There are students who reveal that the role playing method takes place when learning feels fun and not boring. Students also argue that by learning to use the role playing method students become not sleepy, because in previous learning always use the lecture method. This is consistent with the results of the student questionnaire which showed an average of 83.41 in the very active category. Learning by role playing methods makes students easier to understand the material of the excretion system. Like the narration of one class VIII A student, who stated that he understood the processes in the excretion system using the method of role playing. This is consistent with the learning outcomes of these students who passed the KKM. Students also stated that by learning to use role playing methods more enthusiastic. In addition, they also argue that their role playing method becomes motivated, increases class activities, and can collaborate with their group friends.

Teacher responses

Teacher response data were obtained by interviewing the teachers teaching science who is also a teacher in this study. Based on the interview show teachers give positive responses to learning by using methods *role playing* the human excretory system materials.

CONCLUSION

Based on the results of research and data analysis has been done, it can be concluded that there are differences in cognitive learning outcomes of students who follow the teaching method of *role playing* and lectures, method of *role playing* effective against cognitive achievement of students, which is supported by the responses of teachers and students respond, and effective method of *role playing* on the activities of the students, supported by the responses of teachers and students' responses.

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