

Analysis of Increased Activity and Scientific Attitudes of Students on Human Excretory System Materials Through Cooperative Jigsaw Typg in Class XI Students of MAN Pinrang

Masyta Nurul Jihad¹⁾, Firdaus Daud²⁾, and Andi Rahmat Saleh³⁾

Departement of Biology, Faculty of Mathematics and Natural Science,
State University of Makassar

E-mails: 2001masytanuruljihad@gmail.comE-mails: firdaus5752@yahoo.com

Abstract. This study aims to see the increase in learning activities, and scientific attitudes of students in class XI IPA 3 MAN Pinrang through the Jigsaw type cooperative learning model. This research is a classroom action research. The subject of the research conducted at MAN Pinrang recruited 19 students. The method of data collection is observation using an observation sheet. Classroom action research conducted in class XI IPA 3 MAN Pinrang using quantitative descriptive data analysis and then stored as a percentage. Based on the research, it showed that there was an increase in learning activity by 89% (26% very active and 63% active) in the first cycle and by 89% (42% very active and 47% active) in the second cycle. The results of the data obtained in cycle II showed that the score had reached the minimum criteria that had been set at 50% for the number of very active and active categories. There are 7 activity indicators in this study and the seven indicators have reached the minimum specified criteria. As for scientific attitudes, there are 16 indicators that become criteria in classroom action research. In the cycle, the percentage of students' scientific attitudes was 42% (16% very active and 26% active), while the results of the analysis of scientific attitudes in the second cycle showed an increase of 63%. (0% very active and 63% active). These results indicate that the scientific attitude has reached the 50% criteria for the number of very active and active categories. The conclusion of this study is that through the Jigsaw type cooperative learning model, it can improve learning activities and scientific attitudes of XI IPA 3 MAN Pinrang students on the material of the human excretory system.

Keywords: Learning model jigsaw, learning activities, concept understanding, scientific attitude, and MAN Pinrang.

INTRODUCTION

The teacher as a learning agent and facilitator who provides a number of knowledge to students where in one class each student has a different character. For this kind of thing, the teacher is required to provide an approach that is able to make students achieve the goals that have been set. Apart from this, the teacher is also expected to provide convenience in the process of learning activities for students. Many factors can become obstacles why the generalization of each class is different, such as the less conducive classroom atmosphere, then the application of learning models



can be one of the factors that influence students' activity, understanding of concepts, and scientific attitudes.

Several factors can influence learning outcomes, low learning outcomes can be related to students' learning motivation. Having low motivation for a lesson which will cause a decrease in the quality of learning. Therefore, an increase in learning is absolutely necessary, an increase will be more directed and in line if there is student-centered learning where the development of the potential of students is adjusted to the potential, development, and needs, interests of students and the demands of the surrounding environment (Widarta, 2020) .

This research is based on the results of interview observations with the biology teacher MAN Pinrang on February 5 2022, it was found that in class XI IPA 3 the students were less responsive when participating in the teaching and learning process, compared to the other 5 classes so that it also affected the mastery of biology subject matter in that class .

Based on the problems found in class XI IPA 3, the researchers tried to overcome the problems in the form of implementing a learning model that prioritized student activity. In learning biology, it is necessary to create learning conditions that can encourage students to be actively involved during the learning process and generate curiosity in students, and can lead to a process of interaction or reciprocity between teachers and students, as well as students and students in learning activities.

Based on the results of previous research, it was found that the application of the *Jigsaw* was very effective in increasing students' scientific activities and attitudes. This is because the small groups that are formed during the learning process take place making students more productive because the whole series of teaching and learning processes is student-centered (Purba, 2020).

cooperative model *Jigsaw* in this study was based on the results of the research conducted by Johnson and Johnson described in Putra (2014) that the application of the *Jigsaw* can improve learning outcomes; improve memory; can be used to achieve a high level of reasoning; encourage motivation in each individual; improve the relationship between heterogeneous individuals. From the results of the research put forward by Jhonson and Johnson above, it is hoped that by implementing the *Jigsaw* it can increase activity, conceptual understanding, and scientific attitude of students in class XI IPA 3 MAN Pinrang.

RESEACH METHODS

The type of research used in this research is Classroom Action Research with a qualitative approach, because the source of the data is



obtained directly from the problems encountered by describing data, facts, and conditions that exist in the location. This study uses an observation sheet. In the research conducted at XI IPA 3, there were 19 students who were research subjects. The purpose of this study is to improve the quality of learning in class XI IPA 3 MAN Pinrang in order to increase learning activities and scientific attitudes through the application of the *Jigsaw*.

RESEARCH RESULTS

Therresults of research that has been conducted in class XI IPA 3 with 19 subjects. In the form of a descriptive analysis of the data obtained during the research, which consisted of an analysis of the increased activity and scientific attitude of class XI IPA 3 at MAN Pinrang.

A. Statistical Analysis Results Description Activites

1. Cycle I

The results of the descriptive analysis of the activities of the first cycle of students in class XI IPA 3 MAN Pinrang can be seen in the following table.

Table 4.1 Distribution of learning activity scores in cycle I of students XI IPA 3 MAN Pinrang

Interval	Frequency	Percentage %	Category
≤ 7	5	26	Very Active
5 - 6	12	63	Active
3 - 4	0	0	Quite Active
1 - 2	2	11	Not Active
Total	19	100	

Source: Data obtained by analysis of Microsoft Excel 2010

Based on the data in table 4.2 above, the activity of students in cycle I was dominated at intervals 5-6 with a frequency of 12 students with a percentage of 63%. For Cycle I activities, both the first and second meetings, although the conditions of the students still adjust to the model used. The results shown based on data acquisition show that student activities are categorized into active.

2. Cycle II

Table 4.2 Distribution of learning activity scores in cycle I of students XI IPA 3 MAN Pinrang

Interval	Frequency	Percentage %	Category
≤ 7	8	42	Very Active

Interval	Frequency	Percentage %	Category
5 - 6	9	47	Active
3 - 4	2	11	Quite Active
1 - 2	0	0	Not Active
Total	19	100	

Source: Data obtained by analysis of Microsoft Excel 2010

Based on the data in table 4.4 above, the activity of students during the teaching and learning process in cycle II was dominated by the active to very active categories. The results of cycle II activities showed an increase in which in cycle I for the very active category it was only 26% while for cycle II it showed 42% based on these data meaning that the learning activities of students increased and were better than the percentage of learning activities in cycle I. This shows that the activities of students have reached the target or indicators of research success have been achieved.

B. Statistical Analysis Results Description Scientific Attitude

1. Cycle I

Table 4.3 Distribution of scientific attitude scores in the cycle II of class XI IPA 3 MAN Pinrang

Interval	Frequency	Percent %	Category
$\geq 15,86$	2	10	Very High
13.14 - 15.86	6	32	High
10.42 - 13.14	7	37	Currently
7.70 - 10.42	3	16	Low
$\leq 7,70$	1	5	Very Low
Total	19	100	

Source: Data obtained by analysis of Microsoft Excel 2010

Based on the data in table 4.3 above, the scientific attitude of students during the teaching and learning process in cycle I was dominated at intervals from 10.42 to 13.14 with a frequency of 7 students with a percentage of 37%. Then for the high to very high categories, if both are converted to percentages, 42% will be obtained, this has not yet reached the success indicator, namely 50%. Therefore the scientific attitude for cycle I was continued to cycle II.



1. Cycle II

Table 4.4 Distribution of scientific attitude scores in the cycle II of class XI IPA 3 MAN Pinrang

Interval	Frequency	Percent %	Kategori
$\geq 17,61$	0	0	Very High
14.92 - 17.61	12	63	High
12.23 - 14.92	3	16	Currently
9.53 - 12.23	3	16	Low
$\leq 9,53$	1	5	Very Low
Total	19	100	

Source: Data obtained by analysis of Microsoft Excel 2010

Based on the data in table 4.4 above, the scientific attitudes of students during the teaching and learning process in cycle II were dominated at intervals of 14.92 - 17.61 with a frequency of 12 students. The scientific attitude of students during the teaching and learning process took place during the second cycle of class XI IPA 3 MAN Pinrang in the high category with a percentage of 63%. Based on the acquisition of these data that with a percentage of 63% has achieved a success indicator of 50%. The scientific attitude of the students shown showed an increase in cycle II where in cycle one it was only 42% after reflection and continued to cycle II it was obtained as much as 63%.

CONCLUSION

Based on the results of the research that has been done, it can be concluded as follows. After taking action with the *Jigsaw* activities of students in class XI IPA 3 MAN Pinrang have increased. After taking action with the *Jigsaw* the scientific attitude of students in class XI IPA 3 MAN Pinrang has increased.

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