The Effectiveness of Probing Techniques in Learning Biology on Learning Outcomes and Perceptions in Class IX Students of SMP Negeri 2 Sengkang, Wajo Regency

Najmiah[1*], Gunawan[2], Fakhruddin[3], Hasmawati[4], Nurjannah[5]
[1]SMP Negeri 2 Sengkang, South Sulawesi, Indonesia
[2]SMA Negeri 1 Wajo, South Sulawesi, Indonesia
[3] MAN 3 Makassar, South Sulawesi, Indonesia
[4]Makassar City Education Office, Indonesia
[5] Wajo Regency Education and Culture Office, South Sulawesi, Indonesia
***Corresponding Author**, Email: najmiahrum1973@gmail.com

ABSTRACT

Education is not only about the discourse on how to shape young people into competent generations of the nation, but education also includes the practical realm of how the process is applied. The type of research used in this research is experimental research that seeks to find the influence of other variables under tightly controlled conditions. The research method used in this research is quantitative analysis method, namely study that emphasizes its analysis on numerical data or numbers obtained by statistical methods and is carried out in inferential study or the context of hypothesis testing so that the significance of the relationship between the variables studied is obtained. This research is a process that begins with observations in the form of prior experiences on the implementation of learning in class IX.2 SMP Negeri 2 Sengkang, Wajo Regency in the way of preliminary data collection. The results in this study are that students 'perceptions of learning using probing techniques are positive, students feel learning becomes more interesting; students' thinking skills become more trained by answering questions from the teacher. The teacher's perception is excellent about learning using probing techniques; the teacher feels happy to guide students to further improve their thinking skills with questions that are by the level of thinking ability. Reproductive systems learning material in biology learning using probing techniques is more effective than ordinary learning.

Keywords - Probing Technique, Learning, Perception

INTRODUCTION

Learning is an effort to change behaviour while learning as a mental or psychological activity takes place in active interaction with the environment and results in changes in attitudes in knowledge and understanding. Education is not only about the discourse of

how to shape young people into competent generations of the nation, but education also includes the practical realm of how the process is applied.

Teaching and learning activities are the core of activities in education. Everything that has been programmed will be carried out in the teaching and learning process. The teaching and learning process, the teacher, must encourage, guide and provide learning facilities for students to achieve goals. The teacher has the responsibility to see everything that happens in the classroom to help the student development process.

According to Sanjaya (2006), teaching is not just conveying. Gulo (2002) states that education is no longer an attempt to share knowledge, but also an effort to create an environmental system that teaches students (students) so that teaching goal can be achieved optimally. Training in this understanding requires appropriate teaching and learning strategy.

According to constructivism theory, knowledge is built by students. The point is to change the teaching and learning process into a learning process, which is to make students learn.

Based on the reality in the field, especially at SMP Negeri 2 Sengkang, Wajo Regency, the value of student learning outcomes, especially in the Integrated Biology Science subject with a KKM score of 80, classically students have not been able to reach the completeness value limit. Student learning achievement is still at a value of 78.

Based on real conditions like this that drive research, to find and find the best solution to solve the problem.

LITERATURE REVIEW

Constructivism View of Learning

The basis of constructivism according to Dahar (1996), that in one lesson requires the teacher to know how students perceive the phenomenon that is the subject of teaching, then the existing ideas are developed by students into new ideas that have undergone modification. The teacher in constructivism learning is as a facilitator, namely bridging so that students can more easily change these ideas. The problem is how can teachers facilitate students in building that knowledge?

According to Suparno (1997), in broad terms the principles of constructivism are (1) knowledge is built by students themselves, either individually or in groups, (2) knowledge is not transferred from teacher to student but the teacher acts as a facilitator only, while students actively reasoning and using all of their potential, (3) active students continuously construct knowledge so that there is a change in concept to a more detailed, complete, and scientific one, (4) the teacher facilitates the learning process by providing facilities and situations that are conducive to the construction of knowledge take place easily.

Definition of Perception

Perception is the experience of objects, events, or relationships obtained by inferring information and interpreting messages. Humans are beings who are born the most perfect.

Humans have the cognitive ability to process information obtained from the environment around them through their senses, make perceptions of what they see or feel, and think to decide what to do.
to overcome the circumstances it faces. Things that can affect cognitive abilities in humans include the level of intelligence, physical conditions, and the speed of the information processing system is disturbed, it will affect human reactions in overcoming various conditions faced.

Efektifitas Learning

According to Slavin (Guntur, 2004), to see the effectiveness of a learning model there are four indicators, namely the quality of learning, the appropriateness of the level of learning, the intensity of learning and the time required for learning.

The quality of learning is the amount of information or skills that can be learned easily by students. The more skills students can build in a learning process, it can be said that learning is effective. Effective can also be seen by the ability of a method or approach to build a correct understanding of a concept or attitude towards a subject matter. The smaller the error rate that students make and get in learning, it means that learning has taken place more effectively.

The suitability of the level of learning, namely the extent to which it can be ascertained that students have the readiness and ability to build new concepts in their cognitive. Incentives are, how much a learning model or approach is able to motivate students to do learning tasks, the greater

the motivation of students to do a learning task the more effective a lesson is, the greater the motivation of students to do the learning task the more effective the learning is.

METHODOLOGY

The type of research used in this research is experimental research that seeks to find the influence of other variables under tightly controlled conditions. The research method used in this research is quantitative analysis method, namely study that emphasizes its analysis on numerical data or numbers obtained by statistical methods and is carried out in inferential study or the context of hypothesis testing so that the significance of the relationship between the variables studied is obtained. This research is a process that begins with observations in the form of prior experiences on the implementation of learning in class IX.2 SMP Negeri 2 Sengkang, Wajo Regency in the way of preliminary data collection.

The study design was randomized with a final test and a control group. However, in this study, the researcher did not use a control group, but the researcher only examined one group, namely class IX.2.

The data obtained in this research is the pree test value obtained before learning with the probing technique. Meanwhile, post-test scores are obtained after learning using probing techniques.

Learning with the probing technique was carried out for three meetings with material on types and tools of human reproduction. At the end of the learning activity, a post-test was held to obtain data related to problem-solving skills and student learning outcomes.

RESULT & DISCUSSION

In general, data is obtained from the entire learning process using probing techniques on the topic of Coordination Systems. In particular, data to answer research questions were taken during class meetings, namely observation sheets about learning using probing techniques, data from student and teacher questionnaires after learning using probing techniques was completed, and learning outcomes given at the end of the meeting.

Students' perceptions of learning using the Probing Technique.

Table 1. Student Acceptance of Learning using the Probing

No.	Item	Response %				
		A	B	C	D	E
1	In your opinion, the Biology learning was taking place	43,33	30	20	6,67	_
2	Learning that you feel and experience	26,67	50	13,33	10	_
3	Do you agree that this learning is also applied to other concepts in Biology learning	73,33	20	6,67	_	_

a. Student acceptance of learning using the Probing Technique. Student acceptance of learning using probing techniques can be seen in table 1. From the table, it can be seen that in statement 1 there are 13 people (43.33%) who stated that they were very attractive, 9 people (30%) stated that they were attractive, 6 people (20%) stated that they were ordinary and 2 (6.67%) stated that they were not attractive. In statement 2, there were 8 people (26.67%) who stated that it was very pleasant, 15 people (50%) said it was fun, 4 people (13.33%) said they were just ordinary, and 3 people (10%) said they were not fun. In statement 3 there were 22 people (73.33%) who strongly agreed, 6 people (20%) agreed, and there were 2 people (6.67%) who were neutral.
b. The opportunity to put forward ideas or ideas in learning in learning using probing techniques can be seen in table 4.2. From the table, it can be seen in statement 4 that 15 people (50%) stated that they were very large, 10 people (33.33%) stated that they were big, and 5 people (16.67%) stated that they were normal. In statement 5, there were 17 people (56.67%) who stated that they were very appreciated, and 13 people (43.33%) stated that they were appreciated. In statement 6 there are 10 people (33.33%) very happy, 17 people (56.67%) happy, 3 people (10%) just ordinary. In statement 7 there were 9 people (30%) stated that it was very much, 16 people (53.33%) stated that it was a lot, and 5 people (16.67%) stated that it was normal
c. Large, 10 people (33.33%) said they were big, and 5 people (16.67%) said they were normal. In statement 5 there were 17 people (56.67%) who stated that they were very

appreciated, and 13 people (43.33%) stated that they were appreciated. In statement 6 there are 10 people (33.33%) very happy, 17 people (56.67%) happy, 3 people (10%) just ordinary. In statement 7 there were 9 people (30%) stated that it was very much, 16 people (53.33%) stated that it was a lot, and 5 people (16.67%) stated that it was normal

Table 2. Opportunities or Expressing Ideas or Ideas in Learning

No.	Item	Response %			
		A	B	C	D
1	With this kind of learning the opportunity for you to present ideas or ideas	50	33,33	16,67	_
2	Are your ideas or ideas valued by the teacher in learning	56,67	43,33	_	_
3	Are you happy to express ideas or ideas in the form of answers to questions given by the teacher	33,33	56,67	10	_
4	With this lesson, is there an opportunity to exchange opinions with friends and teachers	30	53,33	16,67	_

d. Student interest and motivation in learning with probing techniques. Students' answers about whether learning using probing techniques can increase interest and motivation to learn can be seen in table 3. From the table, it can be seen that statement 8, there are 9 people (30%) who stated that they were taller, there were 14 people (46.67%) who were slightly taller, and there were 7 people (23.33%) who stated that they were normal. In statement 9 there were 8 people (26.67%) who said they were very happy, there were 19 people (63.33%) who said they were happy, and there were 3 people (10%) who said they were normal.

Table 3. Student Interest and Motivation in Learning Probing Techniques

No.	Item	Response %			
		A	B	C	D
1	How would your interest and curiosity be in iology when using this kind of learning	30	46,67	23,33	_
2	Are your ideas or ideas valued by the teacher in learning	26,67	63,33	10	_

e. Interaction in learning. Student statements about interactions in learning can be seen in Table 4. From the table, it can be seen that in statement 10 there are 11 people (36.67%) who strongly agree, there are 13 people (43.33%) who agree, and there are 6 people (20%).) stated that it was normal. In statement 11 there were 21 people (70%) who strongly agreed, and 9 people (30%) agreed

Table 4. Interaction in Learning

No.	Item	Response %				
		A	B	C	D	E
1	In biology learning, students should be given the opportunity to find concept formulas, while teachers are only facilitators or direction givers. Do you agree with this statement?	36,67	43,33	20	_	_
2	Do you prefer that the teacher does not explain the material completely?	70	30	_	_	_

f. Concept understanding. Regarding the understanding of the concept from table 5, it can be seen in statement 12 that 9 people (30%) stated it was very significant, there were 16 people (53.33%) who stated it was meaningful, and there were 5 people (16.67%) who stated it was normal.

Table 5. Understanding of Concepts

No.	Item	Response %				
		A	B	C	D	E
1	The coordination concept that you learn through this study, you feel	30	53,33	16,67	_	_

g. Thinking opportunities for students. Regarding student thinking opportunities in learning using probing techniques, from table 6 it can be seen that in statement 13 there are 13 people (43.33%) who stated that they really gave opportunities, there were 14 people (46.67%) who stated that they gave opportunities, and there were 3 people (10 %) which stated that it was normal.

Table 6. Thinking Opportunities for Students

No.	Item	Response %				
		A	B	C	D	E
1	Learning with techniques like this gives you the opportunity to always think about finding answers to questions the teacher gives	43,33	46,67	10	_	_

h. Teachers' perceptions of learning using probing techniques. From the answers to the questionnaire, it is known that the teacher states that learning using the probing technique is very interesting, the opportunity for students to express ideas and ideas becomes very large by asking questions.

i. Student learning outcomes. Implementation of learning in class IX students of SMP Negeri 2 Sengkang, Wajo Regency, namely class IX.2 as many as 32 students as the experimental group or students who received the probing technique, and class IX.4 as many as 27 students as the control group or without being given the probing technique or taught by the method. just lecture.

DISCUSSION

Analysis of Learning Outcomes

The calculation of the results of the learning test obtained from the test given to the experimental class, it is known that the average value is 2920: 32 = 91.25 (Ninety-one point twenty five).

Students' perceptions of learning using probing techniques

Based on questionnaires or questionnaires distributed to students, positive responses and responses to learning were obtained using probing techniques as follows:

Student acceptance of learning using probing techniques can be seen in table 4.3. From the table, it can be seen that in statement 1 there are 13 people (43.33%) who stated that they were very attractive, 9 people (30%) stated that they were attractive, 6 people (20%) stated that they were ordinary and 2 (6.67%) stated that they were not attractive. In statement 2, there were 8 people (26.67%) who stated that it was very pleasant, 15 people (50%) said it was fun, 4 people (13.33%) said they were just ordinary, and 3 people (10%) said they were not fun. In statement 3 there were 22 people (73.33%) who strongly agreed, 6 people (20%) agreed, and there were 2 people (6.67%) who were neutral.

Teachers' perceptions of learning using probing techniques

From the answers to the questionnaire, it is known that the teacher states that learning using probing techniques is very interesting, the opportunity for students to express ideas and ideas becomes very large by asking questions. Students' ideas and ideas are also appreciated. The teacher also stated that he was happy to ask questions to students during the learning process. According to the teacher, there are so many opportunities to discuss each other, so that students' interest and curiosity in learning Biology is higher

According to the teacher with the probing technique the concept

Coordination system that is learned becomes very meaningful. Learning becomes very fun, the teacher also states that the probing technique provides opportunities for students to develop their thinking skills. The teacher agrees if learning with using probing techniques is also applied to other concepts besides the coordination system. this is in line with the opinion of osman & hanafin (1994), suggesting that students can be guided from a lower level of thinking to a higher level of thinking with questions about "what" or "when" to reveal students' initial knowledge, then proceed with questions. "how" or "why"h

CONCLUSIONS

Based on the analysis of the results and discussion of research on learning using probing techniques, it can be concluded as follows:

1. Students 'perceptions of learning using probing techniques are positive, students feel learning becomes more interesting, students' thinking skills become more trained by

answering questions from the teacher. The teacher's perception is very good about learning using probing techniques, the teacher feels happy to guide students to further improve their thinking skills with questions that are in accordance with the level of thinking ability

2. Learning Reproductive Systems material in biology learning using probing techniques is more effective than ordinary learning.

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