THE INFLUENCE OF DISCOVERY LEARNING MODEL TOWARD THE COMPREHENSION OF BIOLOGY CONCEPT AND SCIENTIFIC ATTITUDE OF STUDENTS AT SMAN 3 TAKALAR

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ABSTRACT

This study aims to describe the application of discovery learning model of learning towards understanding the biology students, describing the application of the model of learning by discovery learning scientific attitude towards learners, described the application of direct instruction learning models towards understanding the biology students, describing the application of model learning direct instrution a scientific attitude toward the students, knowing the difference of understanding of Biology learners learning model with dibelajarkan discovery learning and direct instruction, knowing the difference of scientific attitude of learners instructional model dibelajarkan with discovery learning and direct instruction and knowing the difference of understanding of the concept of Biology and scientific attitudes among learners who dibelajarkan with the model of learning by discovery learning and direct instruction. This type of research is quasi experiment research with a non-experimental design eqivalen pretes posttes control group design. The population of this research are all groups of study XI MIA Takalar SMA Negeri 3 years lessons 2015/2016 which consists of 5 groups of study. Samples taken with the technique of simple random sampling. Data collected with the use of multiple choice tests is reasoned and scientific attitude now. Data were analyzed with descriptive analysis and test of MANOVA. The results showed the following: (1) understanding Biology learners learning model with dibelajarkan discovery learning is at a low category. (2) the scientific attitude of learners instructional model dibelajarkan with discovery learning is at a very good category. (3) understanding of Biology learners dibelajarkan with direct instruction learning models are at a very low category. (4) the scientific attitude of learners who are learning lessons with direct instruction is on the category either. (5) There is a difference in understanding of biological concepts significantly between learners who dibelajarkan with the model of learning by discovery learning and direct instruction (F = 19.669; sig (0.000) < α). (6) there is a difference of scientific attitude significantly between learners who dibelajarkan with the model of learning by discovery learning and direct instruction (F = 6.782; SIG (0011) < α). and (7) there is a difference in understanding the concepts of biology and scientific attitudes among learners who dibelajarkan with the model of learning by discovery learning and direct instruction (F = 10.450; SIG (0000) < α).

Keyword: Discovery Learning, understanding, Scientific attitude

INTRODUCTION

Education is a planned and conscious effort to bring about an atmosphere of learning and the learning process so that learners are actively developing the potential for her to have a religious, spiritual power of self-control, personality, intelligence, morals, as well as the necessary skills themselves, the community, the nation and the State (Act No. 20 of 2003 on the national education system). The learning process in educational units organized in interactive, inspiring, fun, challenging, motivating learners to participate actively.

The process of learning Biology in SMA Negeri 3 Takalar which is a Pilot or Model schools have implemented the scientific approach as delegated in the curriculum of 2013. The average value of Deuteronomy semester of biology students at the class XI MIA on even-numbered

years semester lesson 2014-2015 still demonstrate the value below from ketuntasan learn the minimum set. The average value of Deuteronomy semester students are thoroughly value while 2.43 the specified minimum learning is 2.67. The results of the exams this semester showed that the value of the learning results of students are still less satisfying. Low learning outcomes learner is closely associated with the understanding of the students in understanding the concept of Biological material in the learning process. Understanding the concept is very important in the learning process. The process of understanding the concept of Science should meet the constructivism approaches. Understanding of the concept is also based on scientific consensus and can answer problems that occur in everyday life (Wisudawati, 2013).

Implementation of curriculum in SMA Negeri 3 2013 Takalar by applying the scientific approach in the learning process including material that many relate to the concept. Among the many materials related to the concept of the human Respiratory System material is. Surely the model of learning is expected to improve the quality of learning.

Understanding the concept of the weak also occur due to the condition of learning that is less noticed prakonsepsi belonging to learners. The cause is due to gurus teach based on the assumption that knowledge can be moved intact from the teacher to the learner's mind.

The paradigm shift that would later implies a certain order of assignment in the learning process, one of which is the determination of the learning model. The intended learning model is learning models that can improve thinking skills and competence of learners, i.e. the basic learning model his philosophy konstruktivistik (Suardani, 2001).

The philosophy of konstruktivistik as a foundation of cutting-edge science education assumes that every learner must devise their own ideas and meaningful sense. According to this philosophy, understand something means being able to work on something or putting together a plan, so learners can compose his own questioning something, looking for an explanation and test explanations which he appropriately. Some models of learning that is the basis of his philosophy of learning models such as konstruktivistik Discovery (discovery learning), project-based learning, and cooperative learning model (b. Nurhayati, 2011).

Bruner wear method which he called discovery learning, where learners organize material learned with a form of late. The basic idea of Bruner is the opinion of Piaget stating that children should play an active role in the learning in the classroom (Dalyono, 1996 in Kemendikbud, 2013).

Discovery learning learning is to understand the concept, the meaning, and relationships, through a process of intuitive to finally come to a conclusion (Budiningsih, 2005 in Kemendikbud, 2013), discovery occurs when individuals are involved, especially in the use of her mental processes to find some concepts and principles.
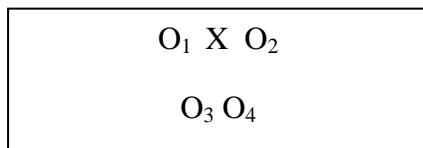
The research results of Joy (2014) also States that discovery learning helps increase the effectiveness of learning. Widiadnyana, Sadia and Suastra (2014) in his research on the influence model of

discovery learning towards understanding of IPA and the scientific attitude of Junior High School students produce findings that this learning model effect on the understanding of the concept of scientific attitude and science learners. Rahman and Maarif (2014) also suggested in the conclusion of his research about the discovery in improving the ability of mathematical analogy.

METHODS

This research using quantitative research approach with the experimental research methods. As for the types of experiments on the research of the experiment of quasi (quasi-alphabets experiment).

The design used in this study are non-equivalenpretest-posttest control group design described as follows.

$$O_1 \ X \ O_2$$
$$O_3 \ O_4$$

Picture: 3.1 design research source: adapted from Sugiyono (2010)

Description:

X = Treatment or treatment

O1 = Pretest learners teach by using the model of learning by discovery learning

O2 = Posttest learners teach by using the model of learning by discovery learning

O3 = Pretest learners teach with direct instruction learning models using

O4 = Posttest learners teach with direct instruction learning models using

Variable research consists of three independent variables namely variables (free) and the dependent variable (tied). The independent variables (free) that is a model of discovery learning, the dependent variables (bound), namely the understanding of the concepts of biology and scientific attitude. The population in this research is the whole groups of study XI MIA SMA Negeri 3 Takalar even semester academic year 2015/2016 which consists of 5 groups of study with poplasi number is 212 students. Sampling is done with simple random sampling technique.

Research instrument consisting of a learning device (RPP, LKPD and students) and the data collection instrument (test of understanding of scientific concepts and attitudes now). Learning devices used in the implementation of learning while the instrument of data collection as a means of data retrieval research. Research data includes the value of understanding the concept of collected written test with techniques in the form of multiple choice, and scientific attitudes collected by using question form. Prior to use, all the instrument validity test by two professors as a validator.

Research data were analyzed with descriptive statistics and test MANOVA. A descriptive analysis was used to describe the value of understanding of scientific concepts and attitudes of each model of learning. While the MANOVA test for testing the hypothesis has been formulated on the significance level of 5%. MANOVA test done before, done test prerequisite: test of its homogeneity and normality test.

The hypothesis of this research, namely: (1) there is a difference between a biological understanding of learners taught by using a model of learning and discovery learning, learners are taught using the model direct instruction learning. (2) there is a difference between scientific attitude

of learners taught by using a model of learning and discovery learning, learners being taught by using direct instruction learning models. (3) there is a difference in understanding the concepts of biology and scientific attitudes among learners are dilajarkan by using the model of learning by discovery learning and the learners are dibelajarkan using a direct instruction learning models.

RESULT AND DISCUSSION

Result

1. Descriptive Analysis

a. Description of the data understanding biology learners on learning model of discovery learning and direct instruction.

A descriptive analysis of the results of biological understanding of learners being taught learning model with discovery learning and direct instruction can be seen in table 1.

Table 1 results of the Descriptive analysis of the understanding of the biology of the learners on Learning Model of Discovery Learning and Direct Instruction.

Uraian	*Discovery Learning*		*Direct Instruction*	
	Pretes	Posttes	Pretes	Posttes
Total sampel	40	40	40	40
Highhest value	43.33	65.56	34.44	56.67
Mean	26.17	41.28	21.97	32.08
Median	24.44	40.00	22.77	32.22
Varians	53.24	83.23	47.44	88.73
Lowlest value	8.89	22.22	8.89	13.33
Standart deviation	7.29	9.12	6.88	9.42
Range	34.44	43.34	25.55	43.34
Mode	24.44	46.67	24.44	30.00

Based on table 1 are obtained that the average understanding of Biology learners learning model is taught before discovery learning is 26.17 with variance, median 53.24 24.44, mode 24.44, range 34.44 the highest value 43.33, lowest value 8.89 with standard deviation 7.29, and once taught learning model disovery learning is 41.28 by 83.23 variance, median 40.00, mode 46.67, range 43.34, highest value 65.56, the lowest value 22.22 with standard deviation 9.12.

Average understanding of Biology learners before learning model for direct instruction taught is 21.97 with variance 47.44, median 27.77, mode 24.44 range 25.55, highest value 34.44, lowest value 8.89 with standard deviation 6.88, and after teach with direct instruction learning models is 32.08, with variance 88.73, median 32.22, mode 30.00 range 43.34, highest value 56.67, lowest value 13.33 with standard deviation 9.42.

The distribution of the frequency and percentage of biological understanding of learners being taught learning model with discovery learning can be seen in table 2.

Table 2. Distribution of the frequency and percentage of biological understanding of learners being taught learning model with discovery learning.

No.	Interval	Category	Discovery Learning			
			Frequency		Persentage (%)	
			Pretest	Posttest	Pretest	Posttest
	85 – 100	Execelent	0	0	0	0
	70 – 84	Good	0	0	0	0
	55 – 69	Enough	0	4	0	10
	40 – 54	Less	1	20	2,5	50
	0 – 39	Very less	39	16	97,5	40
		Total	40	40	100	100

Based on table 2 shows that the frequency distribution of biological understanding learners learning models dibelajarkan discovery learning is at a very low category with percentage 97.5% before and after the learning process the learning process is at a low category with a percentage of 50%. Frequency distribution and percentage of understanding of Biology learners taught with direct learning model instrution can be seen in table 3.

Table 3. distribution of the frequency and percentage of biological understanding of learners taught by direct instruction learning models

No.	Interval	Kategori	Direct Instruction			
			Frekuensi		Persentase (%)	
			Pretes	posttes	pretes	Posttes
	85 - 100	Very high	0	0	0	0
	70 – 84	High	0	0	0	0
	55 – 69	Medium	0	2	0	5
	40 – 54	Low	0	6	0	15
	0 – 39	Very low	40	32	100	80
		Total	40	40	100	100

Based on table 3 shows that the frequency distribution of biological understanding of learners being taught with models direct instrution is at a very low category with 100% before presentation of the learning process and after the learning process are still at a very low category with a percentage of 80%.

b. Description of the data of the scientific attitude of learners being taught learning model with discovery learning and direct instruction.

A descriptive analysis of the results of scientific attitude of learners instructional model disovery dajarkan learning and direct instruction can be seen in table 4

Table 4. Results Of The Descriptive Analysis Of Scientific Attitude Of Learners Being Taught Learning Model With Discovery Learning And Direct Instruction.

Description	Discovery Learning		Direct Instruction	
	After	Before	After	Before
Total Sampel	40	40	40	40
Highhest Value	92,50	95,00	88,00	90,00
Mean	78,04	83,19	75,61	80,06
Median	77,77	82,00	76,00	81,25
Varians	27,29	35,64	31,57	21,96
Lowlest Value	66,00	72,50	63,50	66,00

Standart Deviation	5,22	5,96	5,61	4,69
Range	26,50	22,50	24,50	24,50
Mode	76,50	86,00	76,50	81,50

Based on table 4 was obtained that the average scientific attitude of learners instructional model taught before discovery learning is 78.04 with variance 27.29, the median 77.77, mode76.50, range 26.50, lowest value 66.00 highest value 92.50 with standard deviation 5.22 and after learning is a disovery learning 83.19 with variance 35.64, median 82.00, mode 86.00, range 22.50, highest value 95.00, lowest value 72.50 with standard deviation 5.96.

The average scientific attitude of learners before learning model for direct instruction taught is 75.61 with variants of 31.57, median76.00, modus76, 50, range 24.50, highest value 88.00 lowest value 63.50, with standard deviation 5.61, and after teach with models direct learning instrution is 80.06, with variants 21.96, the median81.25, mode 81.50, range 24.50, highest value 90.00 lowest 66.00 value with standard deviation 4.69.

Frequency distribution of scientific attitude and percentage of learners who are taught with a learning model of discovery learning can be seen in Table 4.5.

Table 5. Distribution Of Frequencies And Percentages Of Scientific Attitude Of Learners Taught With The Model Of Discovery Learning

No.	Interval	Kategori	Discovery learning			
			Frequency		Persentage (%)	
			Pretest	posttest	pretest	posttest
	> 79,5 – 100	Excelent	15	30	37,5	75
	70 - 79,5	Good	24	10	60	25
	60 - 69,5	Enough	1	0	2,5	0
	50 - 59,5	Less	0	0	0	0
	< 59,5	Very Less	0	0	0	0
		Total	40	40	100	100

Based on table 5 with reference to the development of affective assessment device, Directorate of Development HIGH SCHOOL 2010 indicates that the frequency distribution of scientific attitude of learners dibelajarkan model of discovery learning is on the category either by percentage of 60% before the learning process and after the process of learning is on the category with very good percentage of 75%.

Frequency distribution of scientific attitude and percentage of learners who are taught with direct instruction learning models can be seen in table 6.

Table 6 Distribution Of Frequencies And Percentages Of Scientific Attitude Of Learners Taught By Direct Instruction Learning Models

No.	Interval	Category	Direct Instruction			
			Pretest	Posttest	Pretest	Posttest
	> 79,5 – 100	Excelent	6	24	15	60
	70 - 79,5	Good	28	15	70	37,5
	60 - 69,5	Enough	6	1	15	2,5
	50 - 59,5	Less	0	0	0	0

<59,5	Very Less	0	0	0	0
Total		40	40	100	100

Based on table 6 with reference to the development of affective assessment device, Directorate of Development HIGH SCHOOL 2010 indicates that the frequency distribution of scientific attitude of learners taught models direct instruction is on the category either by percentage 70% prior to the learning process and after the process of learning is on the category with very good percentage of 60%.

2. Analysis Of Inferensial

Inferensial analysis was conducted to test the hypothesis of the study. Hypothesis testing is performed with multivariate statistical formula. Before the first hypothesis test conducted done data analysis prerequisite test as a prerequisite test hypothesis that is a test of normality distribution data and test its homogeneity of variance.

a. Test of Normality

Test of normality is done to assure that data is Gaussian. Test of normality in this study using the Kolmogorov-Smirnov statistic. Data distribution normality test results are presented in Table 7.

Table 7. Normality Test Results

Data Group	Kolmogorov-Smirnov					
	Statistics		Non-degree		significance	
	Pretest	Posttest	Pretest	Posttest	Pretest	Posttest
Understanding the concepts of biology in model of discovery learning	0,118	0,106	40	40	0,165	0,200
Understanding the concept of direct instruction models	0,84	0,126	40	40	0,200	0,109
The scientific attitude on a model of discovery learning	0,097	0,111	40	40	0,200	0,200
The scientific attitude on the direct instruction model	0,127	0,120	40	40	0,100	0,147

Based on Table 7 it appears that the value of significance at all group data have value significance greater than 0.05 (sig > 0.05), so the data is Gaussian. This shows that the understanding of Biological data and the scientific attitude is distributed normally.

b. Homogeneity Test

Its homogeneity test aims to find out whether the data in this study have the same variance or homogeneous. Its homogeneity of variance test using test Levene's test are presented in Table 8.

Table 8. Result Homogeneity Test

Data Group	Levene's Test			
	F value	Non-Degree		Significance
		1	2	
Understanding Biology Concpts	0,000	1	78	0,994
Scientific Attitude	3,245	1	78	0,076

Based on Table 8 seem that significance for understanding the concept that was tested using its homogeneity test of its homogeneity Lavene Test (0.994) shows a value greater than α or sig > 0.05. This means that the data value of the understanding of the overall concept of homogeneous. The value of the scientific attitude also showed the same thing where based on test Test earned Lavene value significance of 0076 greater than α or Significance > 0.05. This means the data is scientific attitude overall is homogeneous.

Based on the results of its homogeneity and normality testing then continued with the hypothesis testing. Hypothesis testing using One Way MANOVA test. One way MANOVA test results are presented in Table 9.

Table 9. Result Test One Way MANOVA

Data Group	Uji One Way MANOVA		
	F Value	Non-Degree	Significance
Understanding Concepts Biology	19,669	1	0,000
Scientific Attitude	6,782	1	0,011
Undestanding Concepts Biologi and Scientiis Attitde	10,450	2	0,000

Based on Table 9 for the first hypothesis test, the results of the analysis of the retrieved value F = 19,669; SIG (0.000). so, α < value F is significant, it means that H0 is rejected and H ¬ 1 accepted. It can be concluded that there is a difference in understanding Biology learners learning model with dibelajarkan discovery learning and direct instruction.

The second hypothesis test results show that the value of F = 6,782; SIG (0011) < α. (0.05) So, the value of F was significant, meaning that H0 is rejected and the H1 is accepted. It can be concluded that there is a difference of scientific attitude of learners dibelajarkan by using the model of discovery learning and direct instruction.

The third hypothesis test results showed that the price of F = 10,450; Significance (0000) α. < This means the value of F was significant, H0 is rejected and the H1 is accepted. It can be concluded that there is a difference in understanding the concepts of biology and scientific attitude of learners being taught learning model of discovery learning and direct instruction.

DISCUSSION
1. **Description of biological understanding learners after application of the learning model of discovery learning**

Based on the results of the descriptive analysis in table 4.1 is

obtained that the average understanding of learners instructional model dibelajarkan discovery learning is becoming 26.17 41.28. Based on frequency distribution and percentage score on table 4.2 shows that understanding of biology in model learning discovery learning has increased from a very low category into the category of low.

This indicates that in general the application of discovery learning learning models can contribute to the understanding of biological concepts though are still at a low category. Still low level of understanding of Biology learners in this study due to the application of the model of learning this new disovery learning applied in this study. This is in accordance with the requirements of the learning model supporting disovery learning in, Kemendikbud 2013that the application of the model of learning by discovery learning repeatedly can increase the ability of the invention of the learners in understanding the concept. Therefore it takes more time for learners to be able to construct knowledge in understanding a concept.

Other factors influencing the low understanding of the biology of the learners in the study is is the ability of early learners. Average understanding of learners instructional model before the application of discovery learning is still very low. This is demonstrated by the results of tests of understanding of the biology of learning models before the application of discovery learning is at a very low category.

The ability of early learners is one of the factors that affect the understanding because the initial capability can describe the readiness of students in following lessons. Understanding the concept of learners supported by capabilities of a good

start. The initial capability can also guide the learners in the process of learning to construct knowledge. This is in accordance with the results of the research Husnaeni (2015) that learners have the ability to have high initial understanding the concept better than learners who have low initial ability.

2. Description Of The Scientific Attitude To Learners After Application Of The Learning Model Of Discovery Learning

Based on the results of the descriptive analysis in table 4.5 describes that the average attitude of scientific discovery learning model is 78.04 be 83.19. Based on the categories of scientific attitude in table 2.8 indicates that the category scientific attitude on the model of discovery learning is at a very good category. With the value of the presentation of scientific attitudes learners on the model of discovery learning is 75%. So it can be indicated that the formation of the scientific attitude of learners through a model of discovery learning more provides great contribution in the formation of the scientific attitude of learners.

This is because the model of learning is one of the impetus which can facilitate the learners in the process of the formation of the scientific attitude. The scientific attitude can customize the form by learners with personal experience. This is in accordance with the theories expressed by Azwar (2015), that can be the basis for the formation of an attitude of personal experience must leave a strong impression. Learners experience gained with activities designed to cultivate a scientific attitude.

Learning Science requires an approach that needs to be used. According to Unesco in b. Nurhayati

(2011) articulated the 4 pillars of learning is "learning to know, learning to do, learning to live together and learning to be." The four pillars of learning it can foster a scientific attitude of learners. It is also reinforced by the Suciati (2014) in the results of his research that there is the influence of the interaction between the application of the learning model with the scientific attitude IPA learning results. The results of research by Melani (2012) in his conclusion States that the method of guided discovery learning influential scientific attitude towards real high school students.

3. **A Description Of The Biological Concept Of Understanding Learners After Application Of Direct Instruction Learning Models**

Based on the results of the descriptive analysis in table 4.1 is obtained that the average understanding of learners being taught learning direct instruction is 21.97 became 32.08. Based on frequency distribution and percentage score on table 4.2 shows that understanding of biology in model learning direct instruction is at a very low category.

Study carried out by learners is limited to the well thought out and planned teachers without giving it a chance on learners to develop analytical study process. So in this learning, learners are not trained to locate and construct their own knowledge, only as a knowledge recipient to remember and remember. This resulted in the low ability learners in understanding the lessons, knowledge gained by receiving, considering and memorize it certainly will not be embedded in the memories of old learners so that result in a low level of understanding of learners.

4. **Description Of The Scientific Attitude To Learners After Application Of The Learning Model For Direct Instruction.**

Based on the results of the descriptive analysis in table 4.5 describes that the average scientific stance on direct instruction model is 75.61 into 80.06. Based on the categories of scientific attitude in table 2.8 indicates that the category scientific attitude on the model of direct instruction is on the category either by percentage of 70%.

Trianto (2009) States that one of the direct instruction is the learning process that is centered on the teacher (teacher centered), whereas passive learners and only carry out appropriate activities to teachers. So that learners are just passive recipients of knowledge, the emphasis of the acceptance by the learners knowledge rather than on the search process and construction of knowledge to learners.

5. **The Difference Of Understanding Of Biology Learners Learning Model With Discovery Learning And Direct Instruction.**

Based on the results of the analysis of the first hypothesis test, obtained the results that there is influence of model learning discovery learning towards understanding the biology of learners. The results of this study suggest that an understanding of the concepts as variables bound partially influenced by a model of learning. The results of the analysis of the data obtained shows that the model of learning by discovery learning effect on the understanding of biological concepts and significantly (F = 19,669; sig (0.000) < α.). This is because the discovery learning model based on

constructivist theory of learning in which learners must construct their own knowledge. A learning model of Discovery learning has the potential. great to make a more meaningful learning experience for learners in the discovery concept. On the learning process of discovery learning, learners experiencing mental processes to assimilate a concept and principle. Mental processes are activities intended to observe, classify, made the allegation, describing, measuring and making conclusions.

A learning model of discovery learning has a close relation with the process of understanding. An understanding is a mental construction, an abstraction that is created by the human mind to analyzed the number of different knowledge (Wiggins and Mctighe, Grant, Jay 2012). Wiggins and Mctighe (2012) also suggests that the entrance to the understanding is essential questions. This very first syntax sesai on discovery learning model is stimulation by providing questions that are relevant to everyday life.

Based on the dimensions of understanding, understanding consists of 4 dimensional understanding of translation, interpretation, namely ektrapolasi and justification (Kosasih, 2014 and Subali, 2010). Understanding translation progressed when learners do the observations against the object and the exploration of information and discussion. On the activities of observation, exploration and discussions learners try to translate the information obtained or to give

meaning to the information in an effort to communicate and provide answers to problems. The activities contained in the syntax model learning discovery learning especially in the syntax problem statement, the syntax of data collection for exploration activities data processing and syntax for discussion.

Understanding interpretation develop when learners do the interpretation of the information obtained when explaining the meaning of a statement that goes on the syntax of the data collection and data processing. Similarly on the syntax verification, because through presentations and discussions learners will explain in detail the meaning or meanings of a concept or principle.

Understanding of developing time extrapolation learners acquire training to predict phenomena encountered. Starting from syntax to identify and formulate the problem up on the syntax of a generalization. Moreover, in the kegiata experiment to draw conclusions. The syntax of discovery learning has provided meaningful learning experiences for learners in the knowledge he had learned dig.

Understanding justifications thrive on activity data syntax processing, verifiation and generalization. On the syntax of these learners can manipulate data, interpret the data, draft, making generalizations, proving the hypothesis and conclusion. This is because the ability of learners to justify the methods and procedures so that learners can understand a concept.

The results of relevant research has been conducted by Widiadnyana

(2014) and the conclusion that there is a difference between the concept of understanding IPA students who learn to use the model of discovery learning with students who learn to use direct instruction model.

6. **The Difference In The Attitude Of The Learners Dibelajarkan Scientific Model Of Discovery Learning And Direct Instruction.**

Based on the results of the analysis of the second hypothesis test results obtained that the model of learning by discovery learning effect on the scientific attitude of learners significantly. The results of this research show that the scientific attitude as variables bound partially influenced by a model of learning. Hypothesis test results show that the value of F = 6,782; SIG (0011) < α. (0.05). So, the value of F was significant, meaning that H0 is rejected and the H1 is accepted. It can be concluded that there is a difference of scientific attitude of learners instructional model by using the dibelajarkan discovery learning and direct instruction.

Results of a scientific attitude towards measurements in this study based on scientific attitude indicator is curiosity, rationality, decision-making ability, open-minded, critical thinking, brought, honesty and humility. This can be seen on the syntax of discovery learning.

The first stages in the model of discovery learning stimulation, i.e. by giving problems. Teachers use instructional video or the be pictures to stimulate a sense of understanding of learners. The stages of this stimulation

can increase the learners curiosity. Students are also given responsibility for working on learner activity sheet (LKPD). Curiosity can appear on any learning model syntax. Syntax problem statement, learners will feel curious about the truth of the hypothesis are formulated. Then on the syntax of data collection, enthusiastic learners very in the experiment, as well as activities on the syntax of the data processing, verification and generalization.

Rational attitude on the model of discovery learning looks at the syntax of the data collection. Learners are expected to record all the data and information obtained from experiments to find the concept. This activity can also develop honest attitude, brought and open-minded attitude and decision-making ability. On the syntax of the data processing, verification and generalization is also very accommodating attitudes, because on this syntax will result in new information and evidence as a new concept.

The syntax of the model of discovery learning very provide opportunities for learners to the formation of bepikir attitude is critical. The attitude critical thinking students appear in the activity of identification of problems and the formulation of the hypothesis. The existence of a broad range of opinions, ideas or criticism in the process of discussion in the stage of processing and interpretation of data and at the time of verification. Critical attitude towards findings generated in the activity of experimentation and data collection stage.

The syntax of the model of discovery learning data colletion stages, such as data processing, verification and generalization by experiments conducted to train the learners learn actively and cooperate with other learners in finding answers to the problems encountered, can recognize their own limitations and the limitations of science. It can develop an attitude of humility learners. Learning experiences through the syntax-syntax model discovery learning directly set the intellectual habits of scientists and science learners, where every learner to gradually build a philosophy of his own life. This is supported by research conducted by Pitafi and faroog, 2012 that being scientific means having an attitude of humility.

7. **The Difference Of Understanding Of Biology And Scientific Attitude Of Learners Instructional Model Dibelajarkan Discovery Learning And Direct Instruction.**

Based on the results of the analysis of the test results obtained, the third hypothesis that the model of learning by discovery learning effect on understanding of biology and scientific attitude of learners and significantly. Hypothesis test results showed that the price of F = 10,450; Significance (0000) α. < This means the value of F was significant, H0 is rejected and the H1 is accepted. It can be concluded that there is a difference in understanding the concepts of biology and scientific attitude of learners being taught learning model of discovery learning and direct instruction. This is due to the stages of the learning model of

discovery learning can develop an understanding of the concept of scientific attitude and simultaneously.

The first stages of stimulation, providing the questions related to everyday life, which gave stimulus to the learners to think and could encourage exploration. Arise the curiosity of attitude so that directs thought learners to understand the problems that became the topic of learning.

The second stage, namely the problem statement, learners formulate hypotheses. At the time of the learners formulate hypotheses will arise a critical stance in answering problems mpirical reasoning could bring to memahaman information.

The third stage of the data collection, namely the students collect data based on experimentation. At the time of the experiment, the learners curiosity grew because motivated to find the answer. Scientific attitude is expected to appear in the experimental activities is honest attitude towards facts. Train the learners to use scientific methods in solving problems. Experiential learning through experimentation helps learners to find out for yourself, remember longer and give you hands-on experience so that learning becomes more meaningful. According to Bruner in Trianto (2009), meaningful learning is learning by discovery.

The fourth stage, namely data processing. The scientific attitude which can be formed from this syntax is an honest attitude, brought, rationality, and open-minded. Learners honestly

and objectively interpret the data and information acquired. Similarly, rational attitude toward information processing and can receive the information obtained thereby assists understanding learners.

Stage five, namely verification, students do a presentation and class discussion. Presentation activities gave rise to a critical attitude, self-confidence and the ability to take decisions so that it can gain an understanding of the concepts studied. The sixth stage i.e., generalization, learners fascinating conclusion. This stage can be helpful in making a decision in the form of conclusions, critical attitude and open minded. The ability to give the conclusions into the process the construction thought of learners in induction, thereby providing an understanding of the concept of self learners. This is in accordance with the primary purpose of discovery learning that is an effort to build knowledge in inductive reactance of the experiences of the learners that can be explored in the process of learning (Khoirul Anam, 2015). This research is reinforced by research Widiadnyana (2014) in his conclusion that there is a difference between the average understanding of scientific concepts and attitudes students significantly between groups of students who study with a model of learning by discovery learning with a group of students who learn by direct instruction model.

Understanding learners model dibelajarkan direct intruction still relatively less. Direct instruction learning models are specifically designed to support the learning processes related to declarative knowledge and procedural knowledge is structured properly taught gradually, step by step and to help students learn basic skills. Thus the direct instruction learning models more emphasis to the process of delivering material verbally from teacher to learner so that learners can master the subject matter optimally.

Direct instruction learning models are more oriented to the teacher, the teacher holds a dominant role and the learners are not required to find the material. This resulted in ketidakbiasaan on learners in broadening and deepening his knowledge so that learners become passive. With so the scientific attitude of the learners any less developed.

Direct instruction learning models are less accommodating because understanding on syntax-syntax model has less give opportunities for learners to translate or to give meaning to a question, students only receive direct concept presented by the teacher. Do not direct the activities of data collection to be interpreted in obtaining conclusion. However, in the very training delivery syntax allows the learners to be able to explain the meaning of the information. The existence of the training in the form of granting then learners can elaborate on his knowledge.

This is because the activities to find themselves through a process of scientific concepts through activities of the practice is also the direction of the teacher in guiding and procedural knowledge in practice stage by stage to

the learners, providing opportunities for learners in building understanding. Understanding the direct instruction learning models developed in the syntax check for understanding and providing feedback and provide advanced training and implementation. On the syntax of these learners have the ability to justify a procedure or method based on instruction and supervision from teachers at previous syntax that is guiding trainings.

CONCLUSION

Based on the results of the study and discussion of the results of the study can be summed up a few things as follows.

1. Understanding of Biology students taught with the model discovery learning learning is at a low category.
2. Scientific attitude of learners being taught learning model with discovery learning is at a very good category.
3. Understanding the biological concept of learners taught by direct instruction learning models are at a very low category.
4. Scientific attitude of learners taught by direct instruction learning models are on the category either.
5. There is a difference between a biological understanding of learners being taught learning model with discovery learning and learners being taught by direct instruction learning models.
6. There is a difference between scientific attitude of learners being taught learning model with discovery learning and learners being taught by direct instruction learning models.
7. There is a difference in understanding the concepts of biology and scientific attitude among participants
8. Students are touhgt learning model with discovery learning and learners being

taught by direct instruction learning models.

ADVICE

Based on the results of the study and discussion of the results of the research can be given some suggestions as follows.

1. Learning the biology of learning model with discovery learning need to be considered as one of the means to increase understanding of biology and scientific attitude of learners especially in the materials lesson that more colleagues specializing on the concept.
2. The teacher can use the learning model of discovery learning repeatedly in facilitating learners to improve learning results.
3. For interested researchers conducted a study similar to that conducted research also expected on different subject matter.

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