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Influence of Guided Inquiry Based on Learning Styles for Student Student Outcome (Cognitive) Grade XI in Senior High School 3 Kerinci

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***Abstract* –Based on the observations that have been made in class XI Senior High School 3 Kerinci shows that learners have not played an active role in learning; teachers have not been able to engage learners to play an active role. After observation found that the difficulties teachers facilitate learning styles of learners varied. Teachers use the lecture method, currently used methods applied appropriate for learners who have auditory learning style only. Efforts should be made to overcome this problem is to use the model Guided Inquiry in the learning. This study aims to determine the effect model of guided inquiry the competence of learners. This study is a experimental research The study population was the students of grade XI Senior high School in the school year 2016/2017, while the sample of this research was the students of class XI A1 as the experimental class treated model of Guided Inquiry class XI and A2 classes the control-treated models conventional. Sampling was done by technique. Purposive sampling The instrument used in this study is a form of learning styles to determine the learning styles of students, in the form of cognitive test questions about the description and observation sheet affective and psychomotor. Analysis of the data in this study using T test for cognitive competencies, as well as u test for competency affective and psychomotor. The results showed that the value of competence of learners' experimental class is better than the control class learners based cognitive means. It can be concluded that the model of Guided Inquiry affect the competence skills of learners. Biology students with a visual learning style that follows the guided inquiry learning is higher than students who are obeying the conventional learning, biology students with auditory learning style that follows the guided inquiry learning is higher than students who are obeying the conventional learning. Biology students with kinesthetic learning style that follows the guided inquiry learning is higher than conventional students working with the program**

***Keywords* – Guided Inquiry, Student Learning Style (Visual, Auditori, Kinesthetic), Student Outcome (Cognitive),**

I. INTRODUCTION

Education is essential for human life. The main activity in school education is the learning activities. Learning is the, meaning refers to all efforts how to make someone learn, how to generate the occurrence of events in a person learning that". The main activity in the educational process in the school is learning. Learning is an effort to gain knowledge gained from teachers, parents, friends and environment. Learning is an activity how students can learn not how teachers teach. Teacher as a key component in education should be able to present the subject matter with a clear plan, so that learning competencies expected to be achieved. Teachers should provide opportunities to students doing activities so that students become active. Teachers should choose appropriate learning models and create effective communication between teachers and students so that the expected results can improve students' learning competencies which include competencies cognitive, Based on observations and interviews on 8 August 2016 with a biology subject teachers Seniou High School grade 3 Kerinci Mr. Hendra Mawardi S.Pd., learning difficulties experienced by students is influenced by many factors, including the challenge of learning the teacher is not comparable with the

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ability of students, lack of interest in learning students, as well as learning methods used do not correspond to the student's learning style. During this learning process that takes place is still conventional. Learning should accommodate the interests of all students so that each student is able to give their best performance in learning. There is a paradigm shift from how the teacher taught, how teachers are to provide the opportunity for each student to learn in the best way they have. Teachers must abandon the pattern of teaching to one method for all. Through observation is also known that an active role in the learning process is still lacking, visible from only a few students who were shown to be active in asking and answering questions.

Teachers and schools are faced with the challenge to reach the needs of all students, no matter at what level the academic, social and levels of student progress. Each class will contain a mix of students in schools with the level of ability and different educational needs. For this reason it is important to note learning style for each student basically have differences in terms of being able to receive lessons. In this case one of the tasks of teachers is how to recognize the different learning styles of students and use them in learning to produce effective learning. This means that teachers need to have variations in teaching which can accommodate students' learning styles. The combination of a variety of learning is expected to make it easier for students to understand the lesson. Preliminary data cognitive value of class XI student of Senior High School grade 3 Kerinci shows that the value of students' cognitive aspect is still below minimum completeness criteria that has been set is 75. The average value of daily tests is shown in Table 1.

Table 1. Value Average Daily Deuteronomy 1 Odd Semester Subjects in Biology Grade XI student of Senior High School 3 Kerinci

Grade	Number of students	Average Daily Value Deuteronomy 1
XI	21	66.19
X2	21	66.15
X3	22	65.31

Based on the explanation can be concluded that some students are not active in learning, one of the factors for not properly channeled each student's learning style. Individualistic learning styles, depending on the student's interest to make it easier to understand the learning material, it is important for teachers to know students' learning styles.

Although learning styles different possessed, but the goals to be achieved remains the same, namely to achieve the learning objectives and achieve the expected learning outcomes. There are students who are able to maximize their learning styles; there are also students who have not been able to maximize the learning styles because they are not aware of their learning style. This is evident from the persistence of students who fuss and annoy your friends, and there, just sitting in class, when the teacher explains the lesson, and there are also students who are bored with the explanations material be explained by the teacher.

One model of learning that is expected to accommodate the learning style capability model is guided inquiry. According to Sudrajat (2011), stating inquiry learning is a learning activity that involves optimally throughout the student's ability to seek and investigate things (objects, people or events) in a systematic, critical, logical, and analytical so that they can formulate their own findings with aplomb. This learning is stressed in the process of seeking and finding, where the student as an active subject and the teacher as a facilitator. The learning process becomes dominated by students. Materials and concepts are not given directly but obtained the students through the analysis of their own work.

From the definition of guided inquiry concluded that guided inquiry is a model where the students are guided by teachers to hone her confidence by developing self-reliance, to explore the spirit of children, the students were directed to formulate itself a problem in preparing teachers, discuss with guidance from the teacher.

Based on the description of the application of the model is expected to facilitate the guided inquiry learning styles, develop learning styles that students can optimize their learning style. So as to enhance student learning competencies. For the teacher can know the learning style and apply appropriate learning models with a student's learning style. Based on these problems, do research on the effects accomodated guided inquiry model of learning styles to student learning outcomes in grade XI senior high school 3 Kerinci country.

II. Review Of Literature

2.1 Inquiry

According to Ahmadi (2007: 35) inquiry comes from the word inquire which means asking, asking for information, or investigation, and inquiry means investigation. Students are programmed to be mentally and physically active. The material presented by the teacher is not simply given and

accepted by the students, but students are cultivated in such a way that they gain experience in order to "find themselves" the concepts planned by the teacher.

According to Kuhithau and Carol (2006), guided inquiry has 6 characteristics:

1. Students learn actively and think through experience.
2. Students learn by actively building what they know.
3. Students develop higher thinking power through guidance or guidance on the learning process.
4. Student progress occurs in a series of stages.
5. Students have different ways of learning from other.
6. Students learn through social interaction with others.

2.2 Conventional Method

According to Hawadi (2012: 53) conventional method is a method that has existed since the existence of education, so this method is more often used in every learning and known as traditional methods, correspondingly, Lecture method is a method that may be said as a traditional method. Because, since the first method has been used as a traditional tool. Because, since the first method has been used as a means of oral communication between teachers and students in interaction

2.3 Student Learning Style

According to Deporter & Hernacki in his book Quantum Learning (2002), in general human learning styles are divided into three major groups, namely visual learning styles, auditory learning styles and kinesthetic learning styles:

2.3.1 Visual Learning Style

According to Deporter & Hernacki (2002), in general the human learning style is divided into three major groups, namely visual learning style, auditory learning style and kinesthetic learning style. People with visual learning styles like to follow illustrations, read instructions, and observe pictures, review events directly, and so on. This is very influential on the selection of methods and learning media that dominantly activate the senses of sight (eye). Visual learning style is the style of learning by looking so that the eye is very important role. Visual learning style is done by someone to get information such as seeing pictures, diagrams, maps, posters, graphs, and so on. Can also view text data such as text and letters. A visual type will quickly learn the materials presented in writing, charts, graphics, and images. Anyway it is easy to learn the lesson material that can be seen with the sighting tool. Conversely, it is difficult to learn when faced with the form of sound, or movement. From some understanding above can be inferred that people who use visual learning style to obtain information by utilizing the means of the sense of the eye. People with visual learning styles like to follow illustrations, read instructions, and observe pictures, review events directly, and so on.

2.3.2 Auditory Learning Styles

Auditory learning style is learning style by listening. People with this learning style, more dominant in using the sense of hearing to do learning activities. In other words, it is easy to learn, easy to capture stimulus or stimulation when through the sense of hearing (ear). People with auditory learning styles have power in their ability to hear.

2.3.4 Kinesthetic learning style

Kinesthetic learning style is the learning style by moving, working, and touching. The point is learning by prioritizing the sense of taste and physical movements. Students with this learning style are easier to grasp when they move, feel, or take action. For example, he only understands the subtle meaning when his sense of taste has felt a subtle object.

2.4 Cognitive competence

Cognitive competence is a competency that includes mental activity (brain). According to Bloom, all efforts concerning brain activity are included in cognitive competence. The cognitive domain is a domain that includes mental activity. Cognitive competence reflects the scientific concepts that students must achieve through teaching and learning. Knowledge (cognitive) is the mastery of students to a material, meaning that students are able to absorb the meaning of the material being studied. According Arikunto (2013: 115), mastery is not just remembering what ever learned but also involves various mental activities so that is dynamic.

III. METHODS

The research is a experimental research .In this study, students were grouped into two classes, namely samples of the experimental class and control class. Both classes of samples to get a different treatment. Applied the experimental class guided inquiry learning model types and learning styles while in the conventional applied control class. After that, given the same tests on a second sample class.

The population of this study was all students of class XI Science SMAN 3 Kerinci enrolled in the academic year 2016 / 2017Sampel in this study were students of class XI IPA 1 and XI IPA 2 SMA Middle Island 3 were determined by

technique. *Purposive sampling* this sampling is based on specific characteristics by considering the average value is almost the same class taught by the same teacher as well.

With the following steps:

a. Request a daily test scores Biology XI IPA SMAN 3 Kerinci in the academic year 2016/2017.
b. Determine two sample classes taught by the same teacher and have an average value equal or close to equal.
c. The election of the experimental class and class in the lottery control so that the selected experimental class is a class X_1 and X_2 as the control class.

3.1 Cognitive Competence Analysis

This research is directed to know the results of science (cognitive) learning Students with guided inquiry compare conventional methods

IV. RESULTS AND DISCUSSION

4.1 Result

Based on the results of descriptive data analysis of learning outcomes Biology Senior high School 3 Kerinci using guided inquiry learning model to the 21 students obtained the average value an average of **79.99, the** value of the minimum score of 56, the value of the maximum score of 94. While studying Biology data analysis results Senior High School 3 Kerinci using conventional learning models to 21 students obtained, the average value of **69.27**, the value of the minimum score of 52, the value of the maximum score of 84. This shows that students taught with guided inquiry learning model has an average of learning outcomes is higher than the average student learning outcomes with conventional learning models.

Table 2. Completness Student Result

Statistic	Experiment Result	Conventional Result
Mean	79,99	69,27
Completeness	81 %	42,85 %
Max	94	84
Min	58	52

Obtaining data from the experimental class students studying biology and control classes based on visual, auditori, kinesthetic, learning style is described as follows:

Table 3. Student Result based Student Learning Style

Statistics	Hasil Belajar Siswa					
	Visual		Auditori		Kinestetik	
	Exp.	Konv.	Exp.	Konv.	Exp.	Konv
Mean	80,00	70,30	81.70	69.50	77.16	67.00
Max	94	84	10,35	11.29	7.70	6.81
Min	58	52	94	84	89	75

From Table 3, it appears that the average value of the test results of studying biology students in terms of visual learning style experimental class is higher than the control class. based on the standard deviation, the value of classroom achievement test biological control diffuse than the experimental class test scores for the experimental class standard deviation higher than the control class. Furthermore, in terms of maximum and minimum values obtained from the study, which is the maximum value of the experimental class is higher than the control class, while the minimum value of the same.

Based on table 3, it can be seen that the average value of the test results of studying biology students in terms of auditory learning style experimental class is higher than the control class. Based on the standard deviation, the value of the test results of the same study biology class when compared to the control test scores of the experimental class. Furthermore, in terms of maximum and minimum values obtained from the study, which is the maximum value of the experimental class is higher than the control class, while the minimum value of the experimental class is higher than the control class.

Based on table 3, shows that the average value of the test results of studying biology students in terms of style kinesthetic learning experimental class is higher than the control class. based on the standard deviation, the value of the test results of studying biology class experiment diffuse than control grade test scores for the experimental class standard deviation higher than the control class. Furthermore, in terms of maximum and minimum values obtained from the study, which is the maximum value of the experimental class is higher than the control class, while the minimum value of the experimental class is higher than the control class.

4.2 Discussion

The first hypothesis states that the results of studying Biology students who take the guided inquiry learning is higher than students who followed the conventional learning. Can be concluded that student learning outcomes guided

inquiry learning model is higher than on learning outcomes for groups of students who are taught by using conventional.

Based on this research, students learn by conventional methods into passive and often unwilling to express his opinion and did not want to ask questions on material that has not been understood. This is because the application of the conventional method is dependent upon the ability of the teacher, because the teacher is almost a full role during the learning process. Guru is a dominant source of learning, teachers use more of his time in the classroom to deliver the materials, and the implementation of learning activities is more to deliver information or knowledge so that students become more passive in constructing knowledge.

Unlike the students who study with guided inquiry learning methods, learning takes place will receive guidance as required. In the early stages, many teachers provide guidance, then on the next steps, such guidance is reduced, so that students are able to conduct the proceedings independently. Guidance can be given the questions and discussion multidirectional which can lead students to understand math concepts. In addition, the guidance may also be given through a structured student worksheet. During the learning process the teacher should monitor student discussion groups, so that teachers can know and give instructions and scafolding required by students. Based on research from Ramadhan Sumarmin (2014), the effectiveness of using Inquiri nuanced module is good category (effectiveness), because all students get KKM value established by school that is 75. Average student learning outcomes is 84 with student completeness level reach 100%.

This result is due to that the various factors that can affect student learning outcomes. These factors may come from the students themselves as intelligence and can also come and outside the student as a learning strategy designed by the teacher. In a study at the school, the factors teacher and teach a very important factor that is to say, the control of teachers to the learning strategies are necessary to improve the professional ability of teachers to teach, therefore, teachers must be able to determine the most appropriate strategy and in accordance with the objectives, characteristics of students as well as the material to be conveyed..

The second hypothesis states that the results of studying Biology students with a visual learning style that follows the guided inquiry learning is higher than conventional students working with the program. From the calculation of T-test between groups of students learning outcomes Biology students with a visual learning style that follows the guided inquiry learning more on students obeying meaning that the learning outcomes of students groups treated with guided inquiry learning model that has a visual learning style is not higher than the learning outcomes of students treated group learning model of the conventional model that has a visual learning style.

According to Santrock (2009: 174) states that the style of thinking and learning *(learning and thinking* styles)is not ability, but the preferred way to use one's abilities. Someone who has a visual learning style tend to learn through visual relationship (sight). While on the guided inquiry learning right students to learn more independently in accordance with experience, with the guidance of teachers. This is why the learning outcomes of students who have a visual learning styles treated guided inquiry learning model is not higher than the learning outcomes of students who have a visual learning style treated learning model. Visual learning style of the students is not fully implemented in guided inquiry learning in this study.

Based on the results of research on students with visual learning style with guided inquiry learning is less active in the learning process. Likewise on the application of conventional learning model, students with visual learning style is still able to cope well even less active asked the teacher if there are problems in learning.

Learning models appropriate to the student's learning style will result in higher learning outcomes for students. states that education have realized that students have a variety of ways to learn. Visual students can learn very well just by seeing someone else do it. Usually they liked coherent presentation. They prefer to write down what the teacher says. During the lessons, they are usually silent and rarely disturbed by noise. According DePorter and Hernacki (2002) is visual learning style modalities to access visual images, which are created as well as the mind. With the implementation of appropriate learning model with a visual learning style of students will produce high learning outcomes.

The third hypothesis states that the results of studying Biology students with auditory learning style that follows the guided inquiry learning is higher than conventional students working with the program. From the calculation of T-test between groups of students learning outcomes Biology students with auditory learning style that follows the guided inquiry learning more on students obeying conventional learning Thus H_o received and H_1 rejected, meaning that the learning outcomes of the student group treated learning model guided inquiry that has a learning style Auditory not higher in the study group of students treated the learning

model of the conventional model that has a learning style Auditory

On inquiry learning guided, students during the learning process takes place will receive guidance as required. In the early stages, many teachers provide guidance, and then on the next steps, such guidance is reduced, so that students are able to conduct the proceedings independently. Therefore child auditory type, easy to learn the material presented in the form of sound (lectures), so he quickly caught the teacher explains the lesson material, in addition to the words of a friend (discussion) or the sound radio / cassette he was easily caught. This is why the learning outcomes of students who guided inquiry learning model on students who have auditory learning style is not higher than the results of the study group of students taught using conventional models which have auditory learning style.

Students with auditory learning style will improve learning results if applied learning models According to Reviews their learning style. Auditory usually do not hesitate to pay attention to what the teacher and the make notes. They rely on the ability to hear and remember. During the lessons they may be talkative and easily distracted by noise or noise. Auditory learning style modalities to access all kinds of sounds and words neither created nor remembered. Music, tone, rhythm, Ritma, internal dialogue, and a prominent voice (DePorter et al. 2002: 118). Students who have this learning style will get high learning outcomes if learning models set accordingly. The facts show that the learning outcomes of each person are not the same, but very varied, Because The learning outcomes are influenced by many factors.

The fourth hypothesis states that the results of studying Biology students with kinesthetic learning style that follows the guided inquiry learning is higher than conventional students working with the program. From the calculation of T-test between groups of students learning outcomes Biology students with kinesthetic learning style that follows the guided inquiry learning more conventional learning on students obeying meaning that the learning outcomes of students groups treated with guided inquiry learning is a model that has a kinesthetic learning style is higher than the learning outcomes of students treated group learning is a model of the conventional model of that has a kinesthetic learning style.

Students with kinesthetic learning style more easily grasp the lesson when he moved, touched, or take action. Individuals who have this type, it is easy to learn material in the form of writings, movements, and difficult to study the material in the form of sound or vision that learning model of guided inquiry applied to students with kinesthetic learning style so that research results showed that the learning outcomes of a group of students treated with guided inquiry learning model that has a kinesthetic learning style is higher than the learning outcomes of students treated group learning model of the conventional model that has a kinesthetic learning style.

The results are consistent with the results Sutarto (2011) addressing that inquiry learning model application is higher than the method of discussion. Results Kholifudin study (2013) showed that more guided inquiry learning method can accommodate students of type kinesthetic learning style.

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