DISCOVERY LEARNING METHOD BASED ON SCIENTIFIC APPROACH IN CURRICULUM 2013 IN TEACHING ENGLISH AT SENIOR HIGH SCHOOL

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Abstract

Scientific approach is a teaching strategy using scientific steps in teaching subject at senior high school in Indonesia. It has the characteristics of “doing science”. Discovery learning as one of the methods suggested in scientific approach, allows the teacher to improve the process of learning to creative learning. Creating creative learning process is one of characteristics of golden generation preparation done by creative teacher. This study was conducted to find out and analyze the implementation of discovery learning method based on scientific approach. It was classified into descriptive qualitative study. The data of this study were the activities in the classroom did by teachers and students during teaching learning process. The source of data was the English teachers at senior high school 2 Padang, there were three English teachers there. The data were collected through video recording and observation sheet and interview. There were six video recordings and observation sheets for the three teachers, each of them was observed two times. The finding shows that from the six data recordings, it was found the entire teachers had implemented discovery learning method based on scientific approach in teaching learning process in implementing curriculum 2013. The percentage of each steps with each activities were; creating stimulation was 77.8%, identifying problem was 66.6%, collecting the data was 90%, analyzing the data was 83.3%, verifying the data was 88.9% and generalizing or creating conclusion was only 36.1%. In average, discovery learning method based on scientific approach has implemented in the percentage 73.8%. In conclusion, the implementation of discovery learning method based on scientific approach in teaching English at Senior High School 2 Padang was good with the various activities, but there were still some problems and difficulties appeared.

Key Words: Discovery Learning Method, Scientific Approach, Curriculum 2013.

INTRODUCTION

Curriculum is one of important element in education system. It is the basic planning to prepare Indonesian generation. Curriculum is not only the highlight goals of national education, but also the consideration about the process to reach the goals. Process of learning is should be prepared well before teacher comes to the classroom by
following curriculum that has been made. According to Beauchamp (1975:5), a curriculum is a written document with many ingredients, but basically it is a plan for education of pupils during their enrollment in given school.

In line with this, Glatthorn (2012:4) define curriculum as plans made for guiding learning in the school, usually presented in retrievable document of several level of generality. In general, curriculum is a set of component which has important roles in case of education.

Curriculum in Indonesia had been revised several times. It can be seen in history of curriculum in Indonesia, started by Curriculum 1947, until the current one is Curriculum 2013. The shift of the curriculum does not only change the name of curriculum, but also revise the elements inside.

Dealing with curriculum 2013, the government instructed to implement this curriculum to the local government. This curriculum has been implemented since the beginning of 2013/2014 academic year.

Although this is the new curriculum, it is the development of the previous curriculum. The objective of this is to get better quality of Indonesian education same with the previous one. Zaim (2015) states that curriculum 2013 was designed to improve the quality of education in Indonesia that can educate the students with knowledge, skill and attitude. Curriculum as the basic plan of education has some components. According to Nasution in Yani (2014:8) there are four basic components of curriculum; objective, learning material, learning process, and assessment.

In curriculum 2013, scientific approach is as the basic point in whilst teaching because this approach can make students more creative, critical, and able to solve the problem that they face. Scientific approach is an approach that be planned to make students more creative and active in the classroom through collecting information by doing observation, asking question, doing experiment, and discussing conclusion. Scientific approach is the way to make and answer scientific questions through observation and or experiment. In Curriculum 2013, scientific approach is used in whilst teaching process that consists of observing, questioning, experimenting, associating, and communicating.

The process of teaching and learning is important because through this one teacher can transfer knowledge and control their students to develop their competences. Learning process is a basic process of education because in learning process, teacher, students, material, learning method and others learning components meet, and in it, they create an interaction and communication to reach the goal.

Implementing curriculum 2013 in teaching and learning process in planning of creating golden generation means implementing all aspects in it, they are the basic of scientific approach and also the learning methods suggested. Learning method means a plan or concept of teaching that is used by teacher to develop students’ creativity and to create more interesting classroom. In curriculum 2013, based on scientific approach, there are three kinds of teaching and learning methods are suggested, they are discovery learning, problem based learning, and project based learning. Discovery learning is learning method that requires discovery mental processes, such as observing, measuring, classifying, suspect, explaining, and making decisions.

According to Dewey and Piaget in Castronova (2013:2) discovery learning encompasses an instructional method and methods that focus on active, hands-on
learning opportunities for students. Through discovery learning, teacher guide students to analyze a problem through a finding, they should found areal case so that they can think what they should found about the case. Then Honsan (2014: 282) state that discovery learning is a method to develop students’ learning method actively by doing a research and observing by themselves so that they can remember what they found for long term memory. Implementing discovery learning with the concept and based on English concept means implementing creative learning process of teaching English.

Then, there are six step of discovery learning method, Priyatni (2014:107) states they are: creating stimulation, identifying problem statement, collecting the data, analyzing the data, verifying the data, and creating conclusion or generalization.

English teaching in Indonesia has been based on the curriculum designed by the central government throughout provision of curriculum policies. Indonesian curricula have changed for several times during the past fifty years and it also changes the approach and methodology in teaching English. The aims of teaching English at senior high school are to achieve functional and informational level of literacy. In functional level, students are able to use the language to fulfill their daily communication. In informational level of literacy, students are able to access knowledge with their language ability (BSNP, 2006). And curriculum plays important role in maintaining standards in ELT because all of these aims should consider in curriculum designing. The ability to communicate in English is the ability to deliver the message orally and in writing, the productive skill, the ability of speaking and writing. The ability to access knowledge is the ability to read a written text and to listen the oral text, receptive skill, the ability of speaking and listening (Zaim, 2016).

Although this curriculum and approach are designed to create the better quality of ELT, there are some problems found on each of them. Because of that, the Indonesian government has decided to rethink, reformulate, and redesign the curriculum into the curriculum 2013 in hope to be better curriculum for ELT and others subjects.

Although the curriculum plays important role in maintaining standards in ELT and the upcoming new curriculum 2013 is designed to improve the quality and standard of ELT in Indonesia to create best student as the golden generation, most of the major problems are still existing. Nur in Sahirudin (2013) states there are at least five common problems such as big class sizes, teachers with low level of English proficiency, the low salary of government, the lack of sufficient preparation to teach the new curriculum and the culture barriers for teachers to leave the role of master and to accept or to adopt the new role of facilitator. These all problems will influence the outcome of learning, but by using the methods suggested in curriculum it is hoped the teachers can minimize the problems for students.

Based on the facts above, there are some problems faced by teachers nowadays in implementing learning methods based on scientific approach in English teaching and learning process. First, these are still new and rather difficult to implemented and combine with steps of scientific approach. The second one is the way of teaching, it still needs more exercise. If the process is not done well, the teachers and students will only wasting time without any better result as the main purpose of curriculum.

Teaching English by using scientific approach actually is rather confusing, because scientific is often used in the field of science, social, laboratory and other. Previously, there was not such kind of approach and method like scientific approach in
English language teaching. So, it was one of the reasons why the implementation still low and many the difficulties appear. Many teachers faced these problems in teaching and learning process. But if the teacher implementing the discovery learning with the scientific approach in English version and concept, it will help the teacher to create to better ELT process.

Furthermore, to see the implementation of discovery learning in teaching English and the difficulties faced by teachers and students, the observation in teaching and learning process was done on February until April 2016 at Senior High School 2 Padang as one of favorite school in Padang that have good quality teacher. The result of the study shown that the implementation was still low and sometime just like conventional one, and then there are some difficulties appear in the learning process faced by teacher and students.

Based on the phenomena above, that related to the implementation of scientific approach in teaching English, so that this article presents the implementation of discovery learning methods based on scientific approach in curriculum 2013 in teaching English at Senior High School 2 Padang in 2015/2016 academic year.

RESEARCH METHOD

The type of this research is descriptive qualitative research. This type of research determines and reports the way things are. Hence, this research explained the activities and difficulties during teaching and learning process in implementing discovery learning method based on scientific approach in curriculum 2013 at Senior High School 2 Padang.

The data of this research were the observation sheet and the description of video recording about teachers’ and students’ activities during teaching and learning process and the transcription of interview about teachers’ and students’ difficulties in the implementation. The source of data was the English teachers who teach English at Senior High School 2 Padang. There were three English teachers there.

There were three instruments used to gather the data, namely observation sheet, video recorder and interview guidance. The recording provided naturalistic material and it was a kind of authentic instrument. The data was observed and recorded twice for each teacher in the different class. Then interview guidance was used to find teachers’ and students’ difficulties in the implementation of discovery earning based on scientific approach in curriculum 2013.

The data were gathered by doing observation in the classroom for two times and the observation guidelines were used. Then, coming to the class and observing the implementation based on the observation guidelines and then writing some notes based on what were found during the learning process were done. The aim of observation was to get real detail activities in the classroom. Then, video recorder was used to record the classroom activities in order to get what really happens in classroom and how the steps of discovery learning were implemented. The researcher got involved in the classroom discussion as an observer while doing recording. It was done for some periods to collect data.

Moreover, in order to check the truth worthiness of the data, the triangulation technique was used. In this research, the data were collected by using various
instruments such as video recorder, observation sheet and interview guidance. The data were gathered from different class.

The researcher also did analysis based on various theories from the first and second sources. Regarding to this research, the data were derived from six observation sheets and six recordings of classroom activities from different classes. Hence, it can be stated that the truth-worthiness of this data and instruments have been reached.

After collecting the data that were sufficient needed from the video recording, observation sheet and interview guidance, the data were analyzed. There were several steps in analyzing the data collected. The first is recording the data by using video recorder and observing by using observation sheet and interviewing by using interview guidance. Then analyzed the data from observation sheet and calculated the percentage of the implementation by using the scale suggested by Arikunto (2009).

After that, the video recordings were transcribed. In transcribing the video recording, the code was given to classify the activities of each steps of discovery learning from each recording. Then, the activities of each transcription were put and identified into table and explained them into analysis based on related theories. The activities were classified based on the theories from some experts. The next was the data from interview guidance. First, the interview was transcribed; the code was given to classify the difficulties in implementing discovery learning method. Then, the difficulties found were put and identified into the point and explained them into analysis.

FINDINGS AND DISCUSSION

The research finding is explained in this part deals with the extent of the implementation of discovery learning based on scientific approach and difficulties appear in the implementation. Based on the founding in observation sheet, the percentage of discovery learning method was as in the table on appendix.

The next was the activities in implementing discovery learning steps. After analyzing the transcription of six recordings of classroom activities, the research finding about the activities of steps in implementing discovery learning based on scientific approach has been drawn and categorized into a table; it can be seen completely in the appendix 2.

The first step is creating stimulation, in scientific approach of curriculum 2013, this step belongs to observing. Based on the table above, it can be seen that from the six steps and its’ activities, teacher A, B, and C had tried to implement all of the six activities. Stimulation activities means the students try to observe what they would learn. The teacher can give question, suggestion, statement, or example to stimulate the students about the topic on that day.

First teacher A, she stimulated them by giving vocabularies and question in first observation and gave questions and pictures in the second observation. Teacher B in first meeting could be said she did not stimulate the students, just asking the last lesson, but in second observation she gave example of topic learning. Then teacher C, she gave the students questions and reminded the previous text related.
The second step is identifying the problem statement. Here the students is hoped to be able to identify and what exactly they would learn based on what the teacher’s question or statement before. They can ask many things related to the topic and possible topic that they think about. Through their question, the teacher can build their curiosity increase their creativity in giving question.

Teacher A did this step by asking question and also giving listening task related to the topic. Teacher B in first observation did not give the chance for students to identifying and asking questions and in second meeting she asked them to create example and asked about it. And teacher C asked the students to underline difficult words and asked about meaning and synonym based on the text given.

The third step was collecting the data, in scientific approach in curriculum 2013 it belongs to experimenting. There are some ways that the students can do in collecting the data in English language teaching; observing, reading, searching internet, asking to someone or thinking on their memories. First was teacher A, she implemented this steps by asking students to read a text and also searching internet. Teacher B asking the students to collect the data by searching internet and did the task in LKS. The teacher C asked them to find something by reading a text.

The next is the fourth step of discovery learning, analyzing the data. Here, the students were hoped to be able to process the data they had found when collecting the data based on the topic. In scientific approach in curriculum 2013 it belongs to association.

Teacher A and B implemented this fourth step, analyzing the data by asking the students to write a text based on the topic learning based on the example and the data finding. And teacher C asked them to analyzing the data by doing task and answering questions about the text as the topic learning.

Then next step is verifying the data that belongs to communicating in scientific approach in curriculum 2013. Verifying the data means the students check their information finding and compare with the sources and then communicate the result to others in written or spoken form. All teachers asked them to verify their data founding by comparing with the example or other text or the material on sources. Then, in sharing their task, teacher A asked them to retelling the text, teacher B wrote in whiteboard and did task in LKS, and teacher C asked them to re-write the text by their own words.

The last step is generalizing or creating conclusion. Here the students hoped are able to construct concept based on investigation result that related to the topic and material. From six observation, only four times teacher implemented this step. Teacher A only in first meeting implemented this by asking students to conclude the lesson in general, gave feedback, and gave homework. Then teacher did it for two observations, she asked students to conclude the lesson and lead the students to construct the concept and also gave additional task. And teacher C same teacher A, she only asked the students to conclude the lesson generally in the first observation.
Beside implementation and the activities, the finding of this research was also about the difficulties. Not only teacher faced the difficulties but also the students. There are some difficulties faced by the teacher that researcher found from observation and interview. According to Sahiruddin (2013:571) states that there are some problems of English language teaching in Indonesia include in new curriculum, curriculum 2013, such as students’ lack of motivation, poor attitude toward language learning, big class size, unqualified teachers, cultural barriers for teachers to adopt new role of facilitator. Some of these problems and difficulties also still existed in this new curriculum.

The first difficulty was limited sources, not only for teachers but also for students, especially in implementing discovery learning method. The sources that they could use was internet, they could learn many things from internet under teacher guidance. But in this school, internet access was still limited. All teachers faced it, when they wanted to ask students to browsing internet, they would complain about it.

The second difficulties were limited time allocated to teach English. In curriculum 2013, for English subject is only two lesson hours or one meeting a week. As the goal of curriculum 2013 to create the students that have competences in using English, teacher and students need more time to apply it in the classroom. But in fact, the time was too limited, so that the students cannot practice more in the classroom. Exactly, in learning English, time for practicing is more needed than the time for learning material.

Based on interview with the teacher and students, they were difficult to manage the time in the classroom, sometime the method did not done well, or the material was stopped in the middle of teaching and learning process. The teachers solved this difficulty by giving them the task or homework, and some of the students got additional English course outside the school, but just a little.

The next difficulty was the new thing of curriculum 2013 itself. Curriculum 2013 purpose is to create active, creative and also morality students. But in fact, they were still difficult to be more creative and active in the classroom. It was because their habit as the passive students in the previous curriculum. Both teachers and students faced this difficulty, when the teacher asked them to be more active and creative, the students blamed the teacher if they just wanted to enjoy. This problem of difficulty could be minimized by practicing more and more.

The last but not the least difficulty was English learning material itself. In this research, there were some difficulties about English material found based on interview with the students, such as tenses, pronunciation, long text, vocabularies and other English grammar.

In short, there were some difficulties faced by teachers and also students in implementing English learning method based on scientific approach in curriculum 2013, namely: limited sources, limited time, the relation of material to the method, the new thing of curriculum, the media, students’ focus, students’ creativity, English material itself, and teachers’ creativity. There are many difficulties that faced by the teacher in implementing curriculum 2013. Not only the case from curriculum itself, but also the
problem from students, teacher, environment and the material are faced in implementing this curriculum

CONCLUSION

Based on the result of the research, it can be concluded that the all three teacher at Senior High School 2 Padang had tried to implemented discovery learning method as well as possible. The percentage of the implementation each steps with the each activities were; creating stimulation was 77,8 %, identifying problem was 66,6%,collecting the data was 90%,analyzing the data was 83,3%, verifying the data was 88,9% and generalizing or creating conclusion was only 36,1%.

From six observations from three teachers- twice for each of them, the lowest step implemented was generalizing, this because the time was limited, so the teacher was difficult to manage their time in finishing until conclusion. The identifying problem statement was the most difficult step to implement, because it was a kind of asking hypothesis in experiment. The students were rather difficult to ask question, because they were not familiar with the way to ask question.

Then, dealing with the activities in the implementation of steps of discovery learning based on scientific approach, teachers used several different activities, for example, in creating stimulation, one teacher used question, or pictures, or vocabularies, or they gave text. Although the teachers had tried some ways to implement this method and related it to scientific approach, but not all activities suggested applied.

The last one is about the difficulties face by teacher and students during the implementation of discovery learning based on scientific approach. There were at least six difficulties in implementing discovery learning in teaching English based on scientific approach, they were; limited internet connection, limited time allocated, the new thing of curriculum, students’ mindset about curriculum 2013, English material, and the relation of materials and method used. In conclusion, the implementation of discovery learning method based on scientific approach in teaching English at Senior High School 2 Padang was good with the various activities, but there were still some problems and difficulties appeared.
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