STUDENTS' ABILITY IN IMPLEMENTING SCIENTIFIC APPROACHIN WRITING COURSE DESIGN

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Abstract

This research deals with the student's ability in implementing Scientific Approach Steps in Curriculum Subject. Some students think that writing course design based on The Curriculum 2013 are not easy, because the course design involve five stages of teaching activities, they are observing, questioning, experimenting, associating, and communicating. Therefore, the researcher wants to know the students' ability in implementing those steps in writing course design for curriculum subject. To get the answer, the researcher conducted qualitative research and collected the students' course design as the data. There were 25 course designs used as the data and then, the researcher classified the students' ability in implementing those steps into four categories. They are very good implementation, good implementation, poor implementation and very poor implementation. After analyzing the data the researcher found that 12 students belong to good ability in implementing the Scientific steps, 8 students belong to poor implementation and 5 students belong to very poor implementation. Meanwhile no students belong to very good implementation. This result means that the 12 students have understood about the format, but they still have little bit problem in developing each of the step. Meanwhile, 8 students understood about the format, but they were difficult to develop the content and 5 students did not understand the format and also how to develop the content. Shortly, 13 students still need information and direction about implementing the scientific approach based on The Curriculum 2013.

Keywords*: Students' Ability, Scientific Approcah, Course Design.*

Abstrak

Penelitian ini berkaitan dengan kemampuan siswa dalam menerapkan langkah-langkah Pendekatan Ilmiah pada Mata Kuliah Kurikulum. Beberapa siswa berpikir bahwa desain penulisan tugas berdasarkan Kurikulum 2013 tidak mudah, karena desain kursus melibatkan lima tahap kegiatan mengajar, yaitu mengamati, menanya, mengumpulkan informasi, mengasosiasi, dan berkomunikasi. Oleh karena itu, peneliti ingin mengetahui kemampuan siswa

dalam mengimplementasikan langkah-langkah tersebut dalam penulisan desain pembelajaran untuk mata pelajaran kurikulum. Peneliti melakukan penelitian kualitatif dan mengumpulkan desain pembelajaran mahasiswa sebagai data. Ada 25 desain yang digunakan sebagai data dan kemudian, peneliti mengklasifikasikan kemampuan siswa dalam mengimplementasikan langkah-langkah tersebut ke dalam empat kategori, yaitu implementasi sangat baik, implementasi yang baik, implementasi yang buruk dan implementasi yang sangat buruk. Setelah menganalisis data, peneliti menemukan bahwa 12 siswa memiliki kemampuan yang baik dalam menerapkan langkah-langkah Ilmiah, 8 siswa termasuk dalam implementasi yang buruk dan 5 siswa termasuk dalam implementasi yang sangat buruk. Sementara itu, tidak ada siswa yang memiliki implementasi yang sangat baik. Hasil ini berarti bahwa 12 siswa telah memahami tentang format, tetapi mereka masih memiliki sedikit masalah dalam mengembangkan masing-masing langkah. Sementara itu, 8 siswa memahami tentang format, tetapi mereka kesulitan untuk mengembangkan isi (konten) dan 5 siswa tidak memahami format dan bagaimana mengembangkan konten. Singkatnya, 13 siswa masih membutuhkan informasi dan arahan tentang penerapan pendekatan ilmiah berdasarkan Kurikulum 2013.

Kata Kunci: Kemampuan Siswa, Pendekatan Ilmiah, Desain Pembelajaran.

A. INTRODUCTION

Curriculum is one of requirement subjects for the students in English Department since they will be a candidate of teacher. This subject emphasizes on how to understand, prepare and compose the teaching materials. There are some materials that students learned in curriculum subject. Firstly, the students learn the theories of curriculum, for instance; the concept of curriculum, need analysis, writing indicators, teaching materials, learning materials, and evaluation. After that, the students combine all the theories on writing the real preparation for teaching, they are; writing syllabus and lesson plan. Especially on writing the indicators of teaching and learning achievement, the students learn about the theories firstly before coming to the application. For example, they have to know the theories of curriculum intent and then, they also need to know about the curriculum used at schools nowadays.

Furthermore, since 2013 the government has changed the curriculum from School Based Curriculum (SBC 2006) into 2013 Curriculum. The change of curriculum is done as the respond to needs at the field, for instance; students need, society needs and the important need is work need. In the other word, the previous curriculum could not fulfill the global needs

today. The change of curriculum into the 2013 Curriculum is stated in education law number 70, 2013. As the matter of fact, the lecturer also adjusts the syllabus in curriculum subject by changing some topics into the topics dealing with 2013 curriculum. For example, one of the topics in curriculum subject is about designing the lesson plan. On designing the lesson plan, the lecturer must associate it with the curriculum used by the government and schools because the format of lesson plans usually different for each curriculum. As the example, before 2013, the government decided that School Based Curriculum (SBC 2006) used at schools. SBC asked the schools to develop the teaching activities based on the school's need and the process of transferring knowledge to the students through four steps of teaching activities; exploration, elaboration and confirmation. Then, the approach of this curriculum is Genre Based Approach. Meanwhile, the 2013 curriculum or characterized curriculum, the approach of this curriculum is Scientific Approach. This approach emphasizes on the process of transferring of knowledge to the students through scientific process. It means that the students must do some experiments to get the knowledge and the teachers as the facilitator must facilitate the students to that process through giving problems, issue or project. Therefore, the teaching activities in the 2013 Curriculum involve five stages, they are; observing, questioning, experimenting, associating, and communicating. As the impact of curriculum changes, the lecturer also does some adjustments on the syllabus of curriculum subject by changing the materials of designing lesson plan based on Curriculum 2013.

Moreover, dealing with the changes above, the students in curriculum subject must be able to design the lesson plan based on the curriculum 2013. However, designing the lesson plan based on Scientific Approach is not an easy task. A good lesson plan represents all the steps of scientific approach above. However, the fact in the classroom shows that some students are able to write the lesson plan based on the format of 2013 curriculum, but the content of each steps sometimes do not represent the steps of Scientific Approach. For instance, the activities of observing step are the students must observe a text, listen to something, or see something. However, on writing lesson plan, the students did not represent observing step. Some of them are started by explaining the material or asking students' experience about the material. These activities do not categorize into observing activities. Dealing with the problems above, the researcher wants to investigate how is the students' ability in implementing Scientific Approach on writing lesson plan at English Department of third year students in 2017/2018 Academic Year.

Scientific Approach in the Curriculum 2013

Since 2013, the government has changed the curriculum into curriculum 2013. It is stated in education law No 70, 2013. This curriculum adopts Scientific Approach or method as the "foundation" in developing the teaching learning activities. Scientific Approach emphasizes on the process of transferring knowledge by doing "scientific processes". It is supported byZaim in Longman (2017) who states that Scientific Approach is the process of getting information through experimenting and drawing conclusion from the result of analysis. It means that the process of getting knowledge or ideas is done by collecting some proofs and involves someone's background knowledge to get the result. Then, the teaching learning activities in scientific approach is done inductively rather than deductively (Kemendikbud, 2014). Therefore, the students are given some cases, problems and they try to investigate and collect the data to solve the problems. After that, they combine all of the information by relating all the data and use their background knowledge to get the conclusion or new knowledge. In the other words, Scientific Approach must be done by having Scientific Procedures, such as having the proofs or empirical data and all the processes can be seen or observed.

Furthermore, Daryanto (2014) also states that the process of teaching and learning through Scientific Approach is student-centered learning in which the learners are active to construct the concept, facts or principles by doing some steps; observing, questioning, experimenting, associating and communicating. This theory stated clearly that the teachers have position as the facilitator in implementing Scientific Approach, as the example, the teachers prepare the cases or problems and the students are asked to overcome them by collecting the data. In addition, Fadillah (2014) adds that the process of getting knowledge through Scientific Approach is done by using our own senses and mind, and it is hoped that by having these experiences, the students are ready to face the real life. In line with Fadillah and Daryanto, Hosnan (2014) also propose similar idea. He explains that the purpose of applying Scientific Approach is to inform the students that the sources of knowledge are not only from the teachers but many more. Therefore, it is hoped that learning environment can facilitate the students to do that. It means that the position of teacher as the facilitator is really crucial to provide situations that support the students to be active in getting knowledge. Then, Hosnan (2014) also proposes the characteristics of Scientific Approach, they are: (1) student-centered learning, (2) having scientific procedures in getting concept, facts or principles, (3) developing student's critical thinking and (4) developing student's character.

Dealing with the concept of Scientific Approach above, The Curriculum 2013 has five stages of teaching activities (Kemendikbud, 2014)

and Hosnan (2014). They are; observing, questioning, experimenting, associating and communicating. The activities for each step are explained as the following.

a. Observing

   There are two mainactivities are done in observing step. First, the teacher asks the students to observe something. The process of observation is done in various ways, such as reading, listening, hearing or seeing an object. Second, the teacher tries to guide the students in doing observation to find the important point of the object. Therefore, the students will get information about what is the main topic that will be discussed during the learning process.

b. Questioning

   This step is the follow-up of the observation step. The teacher facilitates the students to ask some questions about the object in observing step. The students can ask the questions to get the information needed to support their comprehension about what they are observed. For the first time, the teacher guides the students to ask questions, and then the students will be autonomous learners in asking questions. The types of questions can be factual question up to hypothetical questions.

c. Experimenting

   Experimenting is the process of collecting information and proofs to get a new knowledge and experience. To do experiment, the teacher can ask the students to do experiment, read many sources, observe an object/ situation or activities and do interview.

d. Associating

   This step emphasizes on how to analyze information, facts or proofs. The process of analysis can be done by relate one information, facts or proofs with the other ones. Hence, the students get a new knowledge, pattern or formula.

e. Communicating

   The last step of Scientific Approach is to communicate the result of observation or conclusion based on the result of analysis. This process is done by telling the conclusion both in oral and written or by using another media.

In short, each of steps must be implemented on writing the lesson plan based on The Curriculum 2013, they are doing observation, asking question, doing experiments, networking and communicating. All of them have relation one another.

B. RESEARCH METHODOLOGY

The approach of this research was qualitative research because this research explains about a phenomenon by focusing on the total picture rather than breaking it down into variables (Ary, et.all, 2006). From this research, the researcher classified the students' ability in implementing Scientific Approach steps in writing the lesson plan. Then, the type of this research was document or content analysis because the focus of the research is on analyzing and interpreting recorded material. Then, the researcher used document of students' lesson plan of class A in 2017/2018 Academic Year which consist of 25 lesson plans. To analyze the data, the researcher used five indicators to classify students' ability in implementing Scientific Approach in their lesson plan. The indicators were based on Kemendikbud, 2014. They are, observing (seeing, reading and listening something), questioning (asking questions from factual to hypothetical questions), experimenting (collecting the data by doing experiment, reading sources, observing objects and doing interview), associating (analyzing the data, relating the data, and proposing the conclusion), and communicating (delivering or telling the conclusion).

Then, to know the students' ability in implementing Scientific Approach steps on writing course design, the researcher used three classifications; they were, the first classification was very good implementation if all the steps and the content are implemented well by the students. The second classification was good implementation if the students only implemented the steps, but some of the contents of steps are incorrect. The third classification was poor implementation in which the students only implemented the steps, but the contents are incorrect. The last classification was very poor implementation in which the steps and the contents are incorrect.

C. FINDING AND DISCUSSION

There are three classifications of texts in The Curriculum 2013, namely, transactional text, functional text and monolog text or commonly known as Genre. Especially about Genre, there are some kinds of genre in learning English, they are: descriptive, narrative, report, procedure, exposition (hortatory and analytical), discussion, explanation and review. After analyzing 25 lesson plans written by the students of class A in 2015/2016 academic year, the researcher concluded the result of analysis in the table below.

Classification			
Very good implementation	**Good implementation**	**Poor Implementation**	**Very Poor Implementation**
-	12	8	5

The table above shows that no students categorize into very good implementation of Scientific Approach steps in writing lesson plan. It means that the students know well the steps of writing lesson plan based on Scientific Approach; observing, questioning, experimenting, associating and communicating, but they could not write the each of the steps well. Then, 12 students have good implementation of Scientific Approach steps in writing lesson plan, but they could not write well the content of each step. It can be seen in the following table.

No	The learning activities for	The Scientific Approach Steps				
		Observing	**Questioning**	**Experimenting**	**Associating**	**Communicating**
Student 1	Report text	Observing a report text	Guiding the students to ask questions that related to report text	Giving a new text of report text and some questions	Asking the students to compare the two kinds of report text and find the differences	Reporting the result of analysis
Student 2	Explanation text	Watching a video	Asking questions about the purpose, social function and linguistic features of the text in video	Discussing about the content of the text	Arranging jumbled paragraph in group	Reporting the result of discussion
Student 3	Recount text	Observing a recount text which has different color.	Asking questions about the meaning of color in text.	Analyzing the generic structure, social function and linguistic features of the text by observing the text.	Comparing two kinds of recount text.	Asking the students to write recount text
Student 4	Procedure text	Watching video about procedure text	Asking the students to find information about the generic	Discussing about the generic structure, linguistic feature and	Finding another example of procedure text and find the	Reading procedure text

			structure, social function and linguistic feature	social function of the text	differences and similarities	
Student 5	Procedure text	Watching a video related to procedure text	Asking questions related to the video	Discussing the video in detail to find the generic structure, linguistic feature and social function	Watching another video, and analyzing it	Reporting the result
Student 6	Functional text	Observing a picture related to material	Asking questions about the picture	Discussing the picture of shopping list to find the linguistic feature, generic structure and the purpose of material.	Showing another picture and find the differences and similarities with the previous one	Write a shopping list
Student 7	Functional text	Observing a medicine label (real object)	Asking questions about the object	Discussing about the linguistic features, generic structure and the purpose of the material.	Answering questions based on a recording	Asking the students' understanding
Student 8	Transactional text	Watching video related to personal identity	Asking questions related to video	Discussing the linguistic feature and the purpose of material	Showing another video and asking the students to compare with the previous video	Doing exercise related to personal identity
Student 9	Transactional text	Observing some pictures	Asking some questions related to the material	Discussing about the generic structure and linguistic feature related to the material	Doing exercise	Discussing the exercise
Student 10	Adjective of animals, things and people	Observing some pictures about people	Guide the students to ask questions	Discussing the about the adjectives based on the pictures	Asking the students to compare the adjectives from some pictures	Asking the students to write simple text about a picture
Student 11	Formal letter	Listening some	Guiding the students to	Asking the students to	Asking the students to	The students do

		examples of formal letter	ask about the generic structure of formal letter	find another example of formal letter in group.	analyze the purpose and generic structure of the letter.	exercise about completing the letter.
Student 12	Descript ive text	Watching a video about descriptiv e text	The students ask about how to write a descriptive text	The students discuss about the generic structure and the purpose of the text	The students find the similarities and differences between two kinds of descriptive texts.	The students complete the text about descriptive text.

The analysis the researcher found that in observing step, the theories from Kemendikbud (2014) and Hosnan (2014) state that some activities under observing are; the teacher asks the students to observe something; the process of observation is done by watching, seeing, reading or listening something. Then, the teacher guides the students to observe the most important point about the topic. Based on the analysis, it is found that all the students could do this step. They asked the students to observe something and also all of them guided the students to find the point or information about the topic being discussed. In addition, the observing activities in the students' course design used the video, text or pictures that were really connected to the material. Therefore, the students will be easy to get the topics that were being discussed.

Furthermore, in questioning step, the students are directed to ask questions about the topic and the teachers must be able to guide the students to ask question. As the matter of fact, the teacher must be creative in preparing the observing step, so that the students can develop their critical thinking in asking questions. After analyzing the students' course design, the researcher found that less than half of students can do that or they do not understand the questioning step. Most of the students start to write this step by focusing on the teacher's questions. It means that the students only answered the teachers' questions and the teachers were dominant in asking questions. This fact shows that the students could not implement the questioning technique well because the theories explained that in questioning technique the students must develop their curiosity about what they have observed and the teachers only need to guide them.

Then, in Experimenting step, The theories from Kemendikbud (2014) and Hosnan (2014) propose that experimenting is focused the process of collecting data or proofs by doing experiment, reading many books, observing objects and doing interview to get knowledge or prove the

information. After analyzing the students' course design, the researcher found that almost all students can implement this step. Many activities wrote by the students in their course design, for example; the students find the information about the purpose, the social function and linguistic feature of a text by reading a text. Another example is the students are asked to observe a picture to find the tense, social function or generic structure of a text. Therefore, it can be concluded that the students have understood how to write experimenting step on writing course design based on curriculum 2013.

In Addition, Associating is the fourth step on writing the Scientific Approach in Curriculum 2013. Kemendikbud (2014) and Hosnan (2014) explain that associating step is emphasized on how the teachers guide the students to analyze the information/knowledge that they have got in experimenting step by relating or finding other proofs. After analyzing the students' course designs, it is found that more than half students can write this step. It can be categorized that the students are able to implement this step. The example of the activities can be seen on the table above, such as; asking the students to find another video, text or so forth and then relate them with the knowledge that they have got in experimenting by finding the similarities or differences of the objects.

The last step is communicating. Referring to the term, communicating is the activity to tell what someone's known to other people. it is similar with the focus of communicating activity in Curriculum 2013 that is the process of telling the result of conclusion that has be gotten from the process of analysis orally or written (Kemendikbud, 2014) and (Hosnan, 2014). It means that on writing course design, the teacher have to ask the students to report the result of the process of associating, such as the result of discussion or analysis. After analyzing the course designs, the researcher found that only half of studentsare able to write this step. Most of the students focus this step on the process of giving task. Therefore, it is known that on writing this step, the students could not implement this step well.

Then, there are 8 students which categorized into poor implementation because they only know about the steps, but the content of the steps are incorrect. For example, in observing activity, they write about the students imitate the teacher's utterance. Meanwhile, the theory from (Kemendikbud, 2014) and (Hosnan, 2014), in observing the teacher asks the students to observe, listen, and watch something that make the students want to ask questions. It means that between the fact and the concept are different. Then, in questioning step, the students write that the teacher ask questions to the students, and it is different from the theory which says that the teacher must guide the students to ask questions. Then for the experimenting step, most of the students ask the students to discuss the structure and the purpose of the material and based on the theory the students are able to implement this step.

However, for associating and communicating the students only write about doing exercise and presenting or collecting the exercise. Therefore, based on it could not be accepted because in associating the students must be able to relate the information and in communicating step the students must present the result of associating.

The last classification is very poor implementation in which 5 students do not understand at all how to write the lesson plan based on the scientific approach steps and the researcher categorizes them into poor implementation. The analysis shown that all the students used the format of School Based Curriculum (SBC) 2006 in whilst teaching, they are; exploration, elaboration and confirmation. Meanwhile, in The Curriculum 2013, the steps of whilst teaching are; Observing, questioning, experimenting, associating and communicating. Referring to the result above, generally, the students still have problem in implementing the Scientific Approach steps even though there are still 12 students could implement the steps well. However

Furthermore, the findings above prove that only half of the students are able to implement the Scientific Approach in writing lesson plan. However, it is only for observing and experimenting steps that could be implemented well. Meanwhile, for questioning, associating and communicating only half of students could implement them well. Meanwhile, the rest of students could not implement the Scientific Approach steps. It means that implementing The Scientific Approach steps is not an easy task. It is also supported by the result of research conducted by Zaim (2017) who conducted the research at Two Senior High Schools in Padang. He found that among five Scientific Approach steps, the teachers could not implement the observing and questioning steps optimally. Meanwhile, the teachers could implement experimenting, associating and communicating steps optimally. It means that it is not an easy task to implement the Scientific Approach in teaching learning process. This research also proves that experienced teachers still need training to understand more the Scientific Approach steps.

In addition, Sukiyadi and Wahyudin (2015) also add that the Scientific Approach is effective to improve students' participation and critical thinking, but the teachers must be ready to prepare effective teaching materials to support the implementation of Scientific Approach. The result of research also adds that it is better for the teachers to do collaborative learning to get a better result of the implementation the Scientific Approach in the classroom.

This research describes that the implementation of The Scientific Approach is not as easy as our imagination. Training and discussion with peers are really important to support the implementation. In line with Sukiyadi and Wahyudin, Shofwan (2016) also proves that Scientific Approach is an effective approach in teaching and learning process. Based

on his research about the use of Scientific Approach in Teaching English as A Foreign Language in SMP N 1 Jakarta, he found that the teachers can implement all the steps of Scientific Approach and then the students are more communicative and expressive in teaching learning process. The research result above clearly stated that if the steps of Scientific Approach are implemented well in the classroom, the result of teaching learning process will be good. However, not all the teachers can do that especially the young teachers.

In conclusion, the young teachers at STKIP PGRI Sumatera Barat still need to learn more about how to implement the Scientific Approach steps in The Curriculum 2013. May be It is caused by their experience about teaching learning process is still lack. Therefore, the lecturer must work hardest to get a maximal result about composing the lesson plan based on The Curriculum 2013. So that the students will be ready to be a young teacher at school next time.

D. CONCLUSION AND SUGGESTION

The research above has to purpose to know the students ability in implementing the Scientific Approach in writing lesson plan. After analyzing 25 lesson plans, the researcher found that 12 students categorized in good ability in implementing the Scientific Approach steps and 8 students are categorized into poor and 5 students belong to very poor implementation. Dealing with the result of the research it can be concluded that the students still need more information and practice about how to compose the lesson plan based on the Scientific Approach steps.

From the result of the research above, the researcher suggests that the lecturer needs to revise the syllabus of curriculum subject by adding more meetings about composing the lesson plan. in addition, it is also suggested to give seminar or training out of the meetings in the classroom by inviting practitioner to know the dynamic of curriculum changes at schools.

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