

## TEACHER'S PERCEPTIONS ON SCIENTIFIC APPROACH AND HOW IT IS EFFECTED IN THE ENGLISH TEACHING

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**Abstract:** The objectives of this study are to describe teacher's perception about scientific approach (SA), analyze factors influencing teacher's perception about SA, and describe how teacher's perceptions about SA as reflected in English teaching. The techniques of collecting data used in this case study are interview, document, and observation. The sources of data are (1) participants, who are the English teacher and tenth-grade students of SMK N 2 Karanganyar, (2) events which are teaching-learning activities and (3) documents which are teacher's lesson plan, interview transcript, questioner transcript, and observation transcript. The techniques used to analyze the data are data reduction, data display, and conclusion. The research findings show; (1) teacher's perceptions about SA are teacher agrees that SA is suitable for English teaching and improves students participation in the class, SA improves teacher's creativity in preparing teaching model and students' creativity, and SA is difficult to apply thoroughly; (2) factors influenced teacher's perceptions are: teacher's teaching experiences, teacher's background knowledge about SA, and difficulties encountered by teacher in applying SA; and (3) In the class there are several steps of SA are not implemented during teaching-learning process and some materials do not fulfill the fourth competence in syllabi.

**Keywords:** *teacher's perceptions, scientific approach, teaching English, curriculum 2013*

### INTRODUCTION

Indonesia, since the last five years, has been implementing the 2013 curriculum. In curriculum 2013, the teaching and learning proses are conducted by applying Scientific Approach (SA). Scientific Approach is a method which is focused on five activities, namely: observing, questioning, experimenting, associating, and communicating. According to Minister of Education and Culture Regulations number 22 the year 2016, SA needs to be strengthened by applying discovery or inquiry learning. It is suggested to apply project-based learning during the learning process, therefore students will conduct contextual activities, in groups work or

individually. These activities are encouraged students to gain knowledge along with the teaching-learning process.

Teachers are one of the keys to the success of implementing the scientific approach in the teaching-learning process (Mulyasa 2013: 41). It has been four years of implementing SA in English learning in Indonesia. LPMP has conducted training for teachers about the 2013 curriculum and scientific approach, yet SA is not optimally applied in language teaching by teachers'. There are some teachers who are only applying the concept of the 2013 curriculum and SA based on their understanding and knowledge.

Djuwairiah Ahmad (2014) conducted a study related understanding the 2013 curriculum in English teaching through teachers and policymaker perspectives which was conducted in Makasar. In his study, he concludes that there are some teachers who are only applying curriculum 2013 especially SA if it is in line with their knowledge and practical skills. They are only applying possible steps of SA based on their perception which is influenced by teacher's knowledge and belief towards change. In addition, some teachers believed that the 2013 curriculum and SA would likely have the same effect as the previous curriculum. Hence, SA is not well implemented during learning activities.

Minister of Education and Culture forms an organization, *Lembaga Penjamin Mutu Pendidikan* (LPMP) which it is expected to help the teacher to understand the 2013 curriculum and SA. LPMP provides steps of training in how implementing SA in learning the process and how to assess students skills according to the 2013 curriculum. The training is being held step by step in different regions so that by 2020 Indonesian Schools will completely applying the 2013 curriculum and implementing SA during learning activities (2017: lpmp.net).

It has been four years of the implementation of SA in English learning in Indonesia. LPMP has conducted training for the teacher about the 2013 curriculum and scientific approach, yet SA is not optimally applied in language teaching by the teacher. There are some teachers who are only applying the concept of the 2013 curriculum and SA based on their understanding and knowledge. The implementation of the scientific approach is determined by teachers' perception in implementing the scientific approach. Therefore the researcher decided to conduct a study dealing with

teachers' perceptions on scientific approach and how it is reflected in English teaching in SMK *Negeri 2 Karanganyar* by doing an interview and observation to get the data from the teacher.

## LITERATURE REVIEW

### Definition of the 2013 curriculum

According to *Peraturan Menteri Pendidikan dan Kebudayaan Indonesia* number 20 the year 2003 about the national education system, there are two dimensions of curriculum. First is the set of plan and arrangement of objectives, contents, and learning materials. Second is the method used in the teaching-learning process. M. Fadlillah states that the 2013 curriculum being developed to improve and parity soft skills and hard skills including attitude aspect, knowledge, and skills. Therefore, it can be concluded that the 2013 curriculum is a set of plan and arrangement of objectives, contents, learning materials and learning method which is encouraged students to actively involve during the learning process by observing, questioning, associating, communicating, and creating.

### Scientific Approach in the 2013 curriculum

Fadlillah (2014: 175) describes SA as a learning approach by conducting science processes. While, Keselman in Margus, et al (2015: 48) states that inquiry-based learning is a learning strategy which follows professional scientific activities to gain knowledge. These scientific processes are observing, questioning, experimenting, associating, and communicating.

In addition, Jack C. Richards and Ricard W. Schmidt (2014: 512) defines that a scientific method is a methodological approach of gaining knowledge based on evidence rather than belief. Therefore, based on that theory students are required to

collect evidence in various activities to gain knowledge.

Minister of Education and Culture in Minister of Education and Culture Regulations of Indonesia number 21 year 2016 states that, in English teaching, the purpose of scientific approach are (1) improving students' ability to identify function, structure and language feature of a text; (2) improving students' communicative competence in three kinds of texts which are interpersonal, transactional, and functional both orally and written; and (3) improving students' ability to create a simple text written and spoken. These purposes are focused on exchanging information or knowledge in the society or for academic purposed.

It is stated by Minister of Education and Culture Regulations number that scientific approach is followed by activities (2017: 5), namely observing, questioning, experimenting, associating, and communicating.

Observing is where students collect information related to the topic by observing text, picture, video or movie of the topic. Students are also suggested to find other references through other resources.

Questioning is the step when the teacher provides a section for students to ask several questions related to the topic. This staged is aimed to improve students' critical thinking and build students' curiosity

After observing and questioning further knowledge about the topic, students implement an experiment to practice the knowledge and skills they got in the previous steps. Activities which are applied in this step, for example, role-playing, simulation, discussion, and playing a game. The goals of this step are improving students' creativity and communicating competence.

Next stage is Associating stage. Associating stage can be done in various activities, such as analyzing data, categorizing data, making a conclusion, and finding a relationship of the data. In English learning, students are comparing and classifying text based on language features, social function, and text structure.

The final stage is communicating. SA is expected to give an opportunity to the students to communicate what they have learned. In this stage, students are expected to publish the knowledge obtained during the applying of observing, questioning, experimenting, and associating. This step can be done in the form of a group presentation, written report, and video recording.

### **Perception**

Robert Sekuler and Randolph Blake (1990: 1-2) explain perception as a result of sequences events which leads to the culminating of experience and behavioral reactions related to the events. The theory explains that a person will gain knowledge and act to an event based on information they have gathered from a similar event. They also state that perception is a biological process of receiving information about events. Aristotle as quoted in Robert, et al (1990: 424) also gives an explanation about perception which he said perception is not only a response of information gathered by the five senses but also obtained by human knowledge of the world. Based on this theory, perception is a response which is occurred not only from stimulus sensed by five senses but also the information from someone's surrounding.

Teachers' perception in the 2013 curriculum is related to the teacher's knowledge of SA, teachers' beliefs in teaching, and teachers' beliefs in students. Even teachers receive similar theories and

practices of implementing the 2013 curriculum and SA, there will be different outcomes in the implementation of SA.

## RESEARCH METHOD

This is a case study. Creswell, as quoted in Hudaya (2016: 46), defines case study as a method which needs exploration or investigation of issues or cases through detailed data collection involving multiple sources of information. It is necessary for this kind of research to explore and conduct an investigation toward the issues. The information related to the issue is gathered toward various sources.

The strength of case study is delivering a holistic and rich understanding of issues in its real-life setting (Hudaya 2016: 46). Hence, the researcher used case study to describe the result of the study related to the teacher's perception on the scientific approach and how it is reflected in English teaching.

The data analysis in this research was based on a teacher's interview, document (questionnaire and lesson plan), and observation. These data were analyzed by data reductions. After analyzing the data, the data are displayed in the form of description.

The data of this research are an interview, teacher's document (lesson plan and questionnaire), and class observation. Teacher's perceptions toward SA were investigated through questionnaire and voice – recorded interview.

## RESEARCH FINDINGS AND DISCUSSION

### Research Findings

Based on the data, Teacher PC has three main perceptions on SA. First, the teacher described SA as a good method to teach English. She believed SA has benefits either to the teacher and students. According to the teacher, SA was able to improve

students' participation during the teaching-learning process. Teacher PC stated,

*“menurut saya, pendekatan saintifik di kurikulum 2013 ada baiknya juga dalam pendidikan karakter siswa. Dari sebelumnya anak hanya mendengarkan guru, kan pada akhirnya murid jadi kreatif setelah menerapkan pendekatan saintifik.”*

(= I think, SA in the 2013 curriculum has good effects, as well as for students' characteristics education. Previously, students' were only listened to the teacher's explanation. Students are becoming more creative after implementing SA.) [Q/01:1].

She believed SA is not only improving students' skills but also students' characteristic. She emphasized on students' participation. SA process' are encouraged students to be more actively involved during the teaching-learning process and creatively learned along with the teaching process. In addition, it was emboldened students to enrich their own knowledge from other resources. The teacher would guide students during their learning process. So, the teacher would not be the only source of students' knowledge.

Second, SA was also able to improve teacher's creativity. Teacher PC believed that SA also improving teacher's creativity in preparing teaching model and students' creativity. She explained that teacher required to implement various teaching models and preparing the teaching process. It was reflected in teacher's preparation of two teaching models which are discovery learning and project-based learning. During English teaching, the teacher also prepared a power point.

Meanwhile, students' creativity was focused on creating. In this case, Teacher PC was trying to enhance students' creativity in making a short movie. The short movie would show not only students' skills in English but also their creativity in

representing the short movie as interesting as possible. Moreover, by conducting group activity (making a short video), Teacher PC believed that it will also teach students about teamwork.

Third, SA was difficult to be applied thoroughly. It was because of the limited time for excessive materials and students' characteristic. She explained that teacher has 108 teaching hours which were not able to be fully held because of national holidays, teacher's meeting, and self – study time. Moreover, students were not used to be prominent in the class. They were rarely asking questions. They were also rarely read books to help them gather their own knowledge. Therefore, even there were materials students had learned before, they were forgotten and made mistakes.

Teacher's perceptions toward SA are affected by teacher's teaching experiences, background knowledge toward SA, and difficulty in implementing SA. In the interview, Teacher PC said that she has been teaching for eleven years and has been implementing teaching models suggested by the government. She claimed that she has also been trying to fully implement SA. Teacher PC also attended several training and find other resource related to K13 and SA to enrich her knowledge. During interview she stated,

*“Ada pun contoh yang di youtube, sepertinya direkasa. Dimana murid-muridnya terlihat rapi. Mereka seperti diarahkan untuk aktif mengikuti pembelajaran. Jika guru bertanya murid divideo tersebut langsung mengacungkan tangan.”*

(= there are examples in youtube but it seems scripted. Students are well behaving. They are told to actively involved in the teaching learning process. When teacher is asking a question, students – in the video – raise their hand immediately.) [Q/01:2]. However, she admitted that

implementing SA thoroughly is difficult. Teacher PC said,

*“pendekatan saintifik memang ada baiknya untuk murid dan guru. Tapi penerapan pendekatan saintifik dalam pembelajaran itu sulit.”*

(=SA carries out good advantages to students and teacher. However, it is difficult to apply SA in the teaching and learning process.) [Q/01:3].

It is because, first, in K13 there are many materials in a limited time. Teacher PC stated that she can optimally use the teaching-learning time due to holidays. Second, students are tent to be reluctant to stand out in class. Students are also rarely searched other learning resources. In her interview Teacher PC stated,

*“karakter anak Indonesia cenderung malu untuk menonjolkan diri, sementara pendekatan saintifik menuntut anak untuk berani menonjolkan diri.”*

(= Indonesian children are mostly too shy to stand out during class activities. While in SA, students are demanded to be active during the teaching-learning process.) [Q/01:4].

Teacher's perceptions described, are reflected in the teacher's English teaching. First, several steps of SA were not implemented. There were three steps which sometimes were not conducted in class, which are questioning, associating, and creating.

During questioning stage, Teacher PC admitted that it is challenging to guide student to actively involve during the questioning stage and form their own question related to the material. Students mostly did not propose question when Teacher PC gave them the time to ask question.

For associating stage, in the questioner, Teacher PC wrote the reason associating was hard to be implemented and sometimes skipped during teaching –

learning process. It was because Indonesian students were not used to read book. They were not used to search information in other resources by themselves. They were also lazy to bring dictionary. There were many words that students did not understand and it would prevent students to get better understanding toward the material.

Meanwhile in creating stage, Teacher PC believed that it consumes times in the process and it is difficult to perform it in class teaching – learning process.

For the narrative text material, students were given five weeks long to create a video of legend. Those activities were mostly conducted outside teaching – learning activities. Therefore, creating stage was usually conducted outside class activities. It could be merged into homework, group discussion, or group project outside teaching – learning activities in class.

Second, some materials do not fulfill the fourth competency in syllabi. Teacher explained that several materials, especially when it is about examination days, are only focused on students' understanding. Teacher often gave assignment only that leads to students' understanding of the material. Therefore, some materials did not perform creating stage in the teaching – learning process.

## Discussion

According to the data, teacher has a positive perception toward SA and K13. These perceptions are SA is: able to improve students' characteristic, able to build teacher's creativity in preparing teaching model and students' creativity, and SA is difficult to be applied thoroughly. These perceptions are nearly in line with a study conducted by Djuwairiah Ahmad. Djuwairiah study shows that several teachers believe that SA as a positive,

innovative, and creative change in the teaching-learning process. However, teacher admits there are difficulties which prevent implementation of SA thoroughly.

Widyaiswara states, it is difficult to implement SA during the learning activities in some subjects (2015: Komposiana.com). It is because SA is not common to be used as a learning method, especially in English. Thus, there are still several problems found in the implementation.

According to teacher, difficulties faced during the implementation of SA are the main reasons for the teacher's perception toward SA. The difficulties are: first, K13 has many competencies and material to accomplish despite the limited time in two semesters and second, students still less participate in the teaching-learning process. Students are supposed to actively gain their own knowledge. However, Indonesian students are mostly passive during the teaching-learning process.

Regardless of teacher's positive view toward SA, the difficulties faced during SA implementation lead to some actions done by teacher. First, there are some steps of SA are not fully implemented in class. It is similar to a study conducted by Amat Jaedun, V. Lilik Hariyanto, and Nuryadin (2014) which stated that teachers are not able to implement all of SA steps. According to teacher, steps of SA that difficult to be applied are questioning, associating, and creating. Second, some materials do not fulfill the fourth competency caused by limited time. Teacher sometimes only teaches the third competence from the curriculum which is achieving students' understanding on the material. Meanwhile, in syllabi, according to *Kementerian Pendidikan* and *Kebudayaan* students are expected to create an outcome related to the material. This usually occurs in nearly examination days.

## CONCLUSION AND SUGGESTION

### Conclusion

Based on the discussion, the researcher concludes that teacher admitted that SA an appropriate approach to teach English. Teacher believed that SA gives advantages to students' and teacher, which are improving students' participation, teacher's creativity in preparing teaching models and students' creativity as well. However, it was difficult to apply SA thoroughly.

These perceptions are influenced by teacher's teaching experiences, teacher background knowledge toward SA, and difficulty encountered by teacher during the teaching-learning process. The difficulty to apply SA thoroughly was due to limited time for excessive materials and students' characteristics which were reluctant to be prominent in class and unwilling to read. Therefore, during the teaching-learning process, there were several steps of SA which were not implemented (questioning, associating, and creating) and SA sometimes was not implemented. Teacher would lead students to the understanding of the material.

### Suggestion

The following are suggestions related to the result of the study which is expected to be beneficial for teachers, students, and policymakers.

For teacher, teacher needs to be more creative in preparing teaching-learning activities. Even students are encouraged to collect and understand their own knowledge, it is teacher's duty to prepare variety activities and different teaching models instead of one only during the teaching-learning process. The varieties in the teaching-learning activities and teaching models will attract students' interest and make students actively learn.

For students, the goals of SA are to improve students' skills by doing series activities. It is also improved students participation by making students actively involved during the teaching-learning process. However, according to teacher, students have several problems that prevent SA to be applied optimally. The researcher hopes by being aware of their problems, the students may be overcome their problems. They should be more active in teaching – learning process. Therefore, it will be easier for teacher to optimally conduct SA during the teaching-learning process.

For policymakers, this thesis is hoped to help the policymakers to understand teacher's perception and be aware of the real class condition. It is also suggested to the policymakers to provide more examples and training related to the implementation of SA and K13 in real class condition. Therefore, SA and K13 will be implemented better in teaching-learning activities.

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