

THE IMPLEMENTATION OF SCIENTIFIC APPROACH OF THE 2013 CURRICULUM AT STATE JUNIOR HIGH SCHOOLS

Dara Novitasari

*English Language Education, Faculty of Teacher Training and Education,
Universitas Sriwijaya, Indonesia*
Email: daranovitashaun@gmail.com

Ismail Petrus

*English Language Education, Faculty of Teacher Training and Education,
Universitas Sriwijaya, Indonesia*
Email: ismailpetrus@yahoo.com

Machdalena Vianty

*English Language Education, Faculty of Teacher Training and Education,
Universitas Sriwijaya, Indonesia*
Email: vianty.unsri@gmail.com

APA Citation: Novitasari, D., Petrus, I., & Vianty, M. (2022). The implementation of scientific approach of the 2013 curriculum at state junior high schools. *English Review: Journal of English Education*, 10(2), 521-532. <https://doi.org/10.25134/erjee.v10i2.6252>

Received: 02-02-2022

Accepted: 08-04-2022

Published: 30-06-2022

Abstract: This study aims at reporting the results of a qualitative study investigating how English teachers implement the Scientific Approach (SA) in English teaching and learning at state junior high schools in Babat Toman. This study is particularly intended to answer three research questions: 1) How is scientific approach implemented in English teaching and learning at State Junior High Schools in Babat Toman, 2) What are the problems faced by the teachers in implementing scientific approach in English teaching and learning at state junior high schools in Babat Toman, and 3) What are the solutions to solve the problems in implementing scientific approach in English teaching and learning at state junior high schools in Babat Toman. The data were collected by using questionnaire, interview, observation, and document review. The participants of this study were the teachers of English, the vice-principal of curriculum, and the students. The findings of this study showed that the teachers used discovery learning to implement of scientific approach in the syntax of the learning model and five stages implemented in English teaching and learning. The problem faced by the teachers in implementing of scientific approach were, the students' lack of critical thinking, the students' difficulty in finding the answer of the problem, the students' inability in analyzing the material, and the students' lack of vocabulary mastery. The solutions used by the teachers to overcome the problem in applying Scientific Approach were: motivating the students to be more active in learning, giving some stimulates questions related to the material, comparing between the recent material and the previous materials, and translating the difficult words found by the students. The conclusion is the teachers had implemented scientific approach in the learning process.

Keywords: *teachers' problems; scientific approach; curriculum 2013.*

INTRODUCTION

In education, curriculum is the main part besides teacher, tools in the education system. Curriculum is very important tool in order to realize and achieve the goal of school education. This means curriculum becomes the guideline for teachers to understand what they have to achieve in their teaching activities.

In Indonesia, curriculum has been changed

overtimes by the government. Winarso (2015) describes that the curriculum change process started in 1947 and currently being used 2013 curriculum. Indonesia now is implementing the 2013 curriculum which is revision of the previous curriculum, School-Based Curriculum (2006 curriculum). The 2006 curriculum was considered insensitive and irresponsible to social change at local, national, and global levels. This curriculum focused on educating

students to achieve knowledge, and lack of skills and attitude (Regulation of Ministry of Education and Culture, 2013). Therefore, a curriculum that can educate students with knowledge, skill, and attitude is needed to improve the quality of education in Indonesia. And the 2013 Curriculum is designed to achieve this need.

Indonesian government has developed 2013 Curriculum for these following reasons: 1) the need to increase the competency, 2) to improve communication skills, 3) to enhance the ability to think critically, and 4) to consider the moral aspects of the students (Regulation of Ministry of Education and Culture, 2013). Based on 2013 curriculum, the students are encouraged to have a responsibility to the environment, interpersonal skills, and ability to think critically (Kurniasih & Sani, 2014). It is characterized by the development of attitudes, knowledge, thinking skills, and psychomotor skills in a variety of subjects. It should be relevant to the needs of life, developing abilities and interests, and responsive to the development of science and technology.

According to Regulation of Ministry of Education and Culture No.22/2016, teacher is the facilitator of learning and learners as students are the learning center. 2013 Curriculum also adopts a learning approach based on the taxonomic theory that includes three competency domains: affective, cognitive, psychomotor. The learning process is fully directed at the development of one domain cannot be separated from the other domains. In addition, 2013 Curriculum introduces a new approach in teaching and learning process which is known as a scientific approach. Ministry of Education and Culture (2013), argued that 2013 curriculum with the scientific approach can be implemented successfully and expectedly could develop and could improve the chances for the learners to take part indirectly in the learning process.

Scientific approach is defined as the process of finding out information in science, which involves testing the ideas by performing experiments and making decisions based on the result of analysis (Longman, 2014). According to Regulation of Ministry of Education and Culture (2013), scientific approach is to encourage and inspire students to think critically, analytically, and precisely in identifying, understanding, solving problems, and applying the learning materials. The description is

how teachers apply learning approach that is connected to real life and develop indicator competencies related to learning materials to be taught, by inviting students to take part and reaction of teachers to students' response in the teaching-learning process (Ministry of education and Culture, 2007). In addition to learning activities in teaching and learning process such as involving group discussion, reading articles or watching videos, then answering questions are designed to encourage the development of critical thinking and social skills by exploring values, supporting content knowledge and developing practical skills (UNESCO, 2015).

The realization of the scientific approach in the classroom is through the five stages as suggested by Kirkpatrick (2016). The five stages are observing, questioning, experimenting, associating, and communicating. In line with it, Scientific approach as described by curriculum 2013 covers the following steps: (1) observing; to identify the problem, (2) questioning; formulate the problems to develop critical thinking, (3) collecting the data; to collect the materials or data in various learning ways, (4) associating; to analyze and make conclusions data have been observed, and (5) communicating; to develop students' knowledge and skill in delivering the idea Clearly (Ministry of education and Culture, 2016). In the learning process, the students' language development is also improved through their activeness. Based on the research result of Hidayati (2014), scientific approach made the students easier to understand the material and the students could improve their learning outcomes in the classroom.

Implementing new things in education will make the teachers face some obstacles like the English teacher confused how to implement 2013 curriculum in teaching at the class and also get difficulties in applying the scientific approach in the teaching and learning process. In other sides, some teachers have followed the workshop about the 2013 curriculum. In line with it, teachers who teach in schools that have implemented the 2013 curriculum are required to follow technical guidance and training in the 2013 curriculum, the main is that teachers do not misrepresent the subject matter related to the 2013 curriculum <http://www.adakitaneews.com/guru>-It means the teacher has knowledge about the curriculum and knows how to implement it. Dealing with this opinion, English teachers have to capable of

implementing the 2013 curriculum well.

In reality, there are still some problems in implementing of scientific approach. According to Afrianto (2017), the implementation of scientific approach is having some obstacles like lacking clarity and complexity of teaching procedures, the teachers believe that they do not apply all scientific approach stages in the classroom. Based on research from Azizah, Ariwidodo and Adriana (2015), the implementation of the scientific approach to teaching English in the 2013 curriculum raises some obstacles in its implementation such as difficulties in making students active, they are not confident in answering questions from the teacher so they make themselves behind their friends. Most teachers also find it difficult to motivate students to ask questions both to their friends and to their teachers. In addition, based on the researcher's observation in state junior high schools in Babat Toman, some of teacher said that the main point teacher must understand the approach itself and how to apply it in the classroom. To apply all the stages of the scientific approach is not easy, questioning stage is the most difficult part to apply. Other supporting problems, sometimes students feel shy, afraid of being laughed by their friends because of the lack of vocabulary. When teachers skip one or more steps in the scientific approach it means that sometimes the scientific approach is not appropriately applied. That is a problem that states as the weakness of the implementation of the education quality improvement efforts (Jaedun, Hariyanto and Nuryadin, 2014).

Based on the explanation above, the researcher concludes that the implementation of the 2013 curriculum and applying the scientific approach to teach English needs to be integrated. Schools and teachers in some of these state junior high schools have been running the 2013 curriculum for about three years and they have attended teacher training on the 2013 curriculum, which means they have used a scientific approach in teaching and learning activities while running the 2013 curriculum and. Therefore, the researcher will investigate how scientific approach in English teaching and learning at state junior high schools in Babat Toman is implemented, the problems faced by the teacher in implementing of scientific approach in teaching and learning, and the solutions to solve the problems in implementing of scientific approach in English teaching and learning through a study entitled "The

Implementation of Scientific Approach of the 2013 Curriculum in English Teaching and Learning at State Junior High Schools in Babat Toman"

METHOD

This study was a descriptive qualitative study. The data collection conducted through interview, questionnaire, observation checklist, and document review to find out the implementation of scientific approach of the 2013 curriculum in teaching and learning at state Junior High schools in Babat Toman, problems in Implementing of Scientific Approach of the 2013 curriculum in teaching and learning at state junior high schools in Babat Toman and solutions to solve the problems in Implementing of Scientific Approach of the 2013 curriculum in teaching and learning at state junior high schools in Babat Toman.

This study was conducted at five junior high schools in Babat Toman: Junior High School 1, 2, 3, 4, and Junior High School 5. The participants of this study were the teachers of English, the vice-principal of curriculum each school and students. The five teachers of English selected in each school based on the observation the researcher did on junior high schools in Babat Toman. There were five teachers who are willing to be participants in this study.

To collect the data, the researcher used four instruments. The instruments included interview, questionnaire, observation, and document review. After the data were collected, the researcher analyzed for answer the research questions. While the data of interview, questionnaire, observation, and document were analysis by descriptive analysis. In interview,

Questionnaire was analyzed by *Likert Scale* to inquire the frequency of adaptation challenges in five-level from (1) *Strongly disagree*, (2) *disagree*, (3) *neither disagree*, (4) *agree*, and (5) *strongly agree*. The results of questionnaire are transcribed descriptively used for showing the implementation of scientific approach in English teaching and learning. Observation was analyzed by checklist with Yes/No answer, putting the answer in the form of percentage and then describe. While the data of interview, and document were analysis by descriptive analysis.

The researcher used triangulation to determine validity by analyzing from various perspectives. Denzin (2006) stated that triangulation is the

process of corroborating evidence from different individuals (e.g., a principal and a student), types of data (e.g., observational fieldnotes and interviews), methods of data collection (e.g., documents and interviews) in descriptions and themes in qualitative research. Based on the types of triangulation, the researcher used Methodological triangulation. Therefore, data triangulation helped the researcher to justify the findings and results of this study.

RESULTS AND DISCUSSION

As it is described earlier, this study tried to answer the following questions: ‘How is scientific approach implemented in English teaching and learning at State Junior High Schools in Babat Toman’, ‘What are the problems faced by the teachers in implementing scientific approach in English teaching and learning at state junior high schools in Babat Toman’, and ‘What are the solutions to solve the problem in implementing scientific approach in English teaching and learning at state junior high schools in Babat Toman’. In answering this question, the researcher obtained four types of data; semi structured interviews, questionnaires, observations checklist, and documents review.

First, interview was done once to each teacher. Secondary, Questionnaire was done once to each teacher. Thirdly, data were obtained through observation checklist that has been done four times

for each teacher. Moreover, documents review was also done by reviewing lesson plans. The findings were derived from the data based on the stages in scientific approach; observing, questioning, experimenting, associating, and communicating.

Result of questionnaire

This part presents the results of questionnaire given to the teachers of English. The descriptions of the profiles of English teachers, the implementation of Scientific approach of the 2013 curriculum in English teaching and learning at State Junior High Schools in Babat Toman.

Profile of the teachers of English

The data concerning the profiles of the State Junior High School teachers contained the information about the teachers’ gender, age, highest academic level, for how long they have been teaching, and their participation in trainings related to 2013 curriculum.

There were 5 teachers of English from state Junior High Schools, 1 teacher of English from Junior High School 1 in Babat Toman, 1 teacher of English from Junior High School 2 in Babat Toman, 1 teacher of English from Junior High School 3 in Babat Toman, 1 teacher of English from Junior High School 4 in Babat Toman and 1 teacher of English from Junior High School 5 in Babat Toman.

Table 1. *Profile of the teachers of English*

The participants	Gender	Age	Highest academic level	Teaching experience	Participation in training related to 2013 curriculum
H	Female	39	Postgraduate	16	Yes
W	Female	37	Undergraduate	16	Yes
F	Female	28	Undergraduate	9	Yes
H	Female	25	Undergraduate	6	Yes
WA	Female	26	Undergraduate	2	Yes

The data from a questionnaire consists of 20 questions about the scientific approach which was constructed based on The Regulation of Ministry of Education and Culture number 103 the year 2014. The questionnaire used 5 point Likert Scales from Veglas (2006). The scales were from one up to five. (Strongly agree: 5; Agree: 4; Neither agree nor disagree: 3; Disagree: 2; and Strongly disagree: 1). The data were calculated by using formula from Arikunto (2012). All of the scores are gained from five English teachers were accumulated, were

multiplied by each scale, were divided by the maximum score and were multiplied by 100%.

The calculation of the teachers’ comprehension of scientific approach shows in the following table:

Table 2. *The teachers’ comprehension of scientific approach*

No	Statements	SA	A	ND	D	SD	Total
1.	S1	10	12				22
2.	S2		16				19
3.	S3	25					25

4.	S4	10	12	22
5.	S5	10	8	20
6.	S6		20	20
7.	S7		12	12
8.	S8	10	12	22
9.	S9	10	12	22
10.	S10	10	12	22
11.	S11	5	16	21
12.	S12	10	12	22
13.	S13	10	12	22
14.	S14	10	8	18
15.	S15	5	16	21
16.	S16	10	12	22
17.	S17		20	20
18.	S18	15	4	20
19.	S19	15	8	23
20.	S20	20		20
TOTAL				415

From the table above, the highest scores are the statement number 3 with the total score 25. Meanwhile, the lowest scores are the statement number 7 with the total score 12. There is 1 disagree answer in the questionnaire. It is in the statement number 5. The result of the teachers' comprehension of scientific approach shows in the following table.

Table 3. *The percentage of teachers' comprehension of scientific approach in teaching English*

No.	Statements	Score	Total Score	Percentage
1.	S1-S20	415	500	83 %

The total score of teachers' comprehension of scientific approach is 415. Then, in getting the percentage, the scores are divided by the total score 500. Next, it is multiplied by 100%. The average result of the questionnaires the distributed for 5 teachers from 5 schools is 83%. Based on the criteria of Arikunto (2007), 83 % is included in category 61 % - 80 % as Excellent. It is meant that the teachers' comprehension of the concept of scientific approach is Excellent. The teachers

understood the concept of the scientific approach for all of the five stages (observing, questioning, experimenting, associating and communicating).

In the questionnaire, there is no teacher who fills strongly disagree answer in the questionnaire. It is interpreted that they have understood the importance of scientific approach. All of the English teachers agree with the statement number three. Statement number three is in observing stage, the teachers ask their students to listen to the lesson. Keep paying attention in a lesson is very important. The students also need to concentrate because it makes them absorb the knowledge. It is also supported by the findings from Zeki (2009) revealed that nonverbal communication could be an important source of motivation and concentration for students' learning as well as a tool for taking and maintaining attention.

Based on the explanation above, it can be obtained that from collecting data through questionnaires, good results are obtained. It can be seen with them supporting every point of the scientific approach.

The results of interviews

As it is described earlier, this study tried to answer the following questions: "How is scientific approach implemented in English teaching and learning at State Junior High Schools in Babat Toman", "What are the problems faced by the teachers in implementing scientific approach in English teaching and learning at state junior high schools in Babat Toman", and "What are the solutions to solve the problem in implementing scientific approach in English teaching and learning at state junior high schools in Babat Toman". In order to strengthen the questionnaire result, the researcher conducted an interview with teachers of English, the vice principal of curriculum and students during their break time. Initial would be used in presenting the information source to keep the interviewees anonymous.

Table 4. *List of the interviewees*

No.	Initial	Position
1.	H	The teacher of English at Junior High School 1 in Babat Toman
2.	W	The teacher of English at Junior High School 2 in Babat Toman
3.	F	The teacher of English at Junior High School 3 in Babat Toman
4.	H	The teacher of English at Junior High School 4 in Babat Toman
5.	WA	The teacher of English at Junior High School 5 in Babat Toman
6.	S	The vice-principal of curriculum in Junior High School 1 in Babat Toman

7.	W	The vice-principal of curriculum in Junior High School 2 in Babat Toman
8.	UE	The vice-principal of curriculum in Junior High School 3 in Babat Toman
9.	MA	The vice-principal of curriculum in Junior High School 4 in Babat Toman
10.	A	The vice-principal of curriculum in Junior High School 5 in Babat Toman
11.	TH	Student of Junior High School 1 in Babat Toman
12.	AS	Student of Junior High School 2 in Babat Toman
13.	H	Student of Junior High School 3 in Babat Toman
14.	I	Student of Junior High School 4 in Babat Toman
15.	R	Student of Junior High School 5 in Babat Toman

How the implementation of Scientific approach of the 2013 curriculum in English teaching and learning at State Junior High Schools in Babat Toman

This part presents the results of interview given to teachers of English, the vice-principal of curriculum and students. Based on the first interview session, five teachers said they have already implemented observing stage in all meetings. Most of teacher has implemented scientific approach; at least teachers who have attended the training have understood the approach.

“As far as I can control it and Commonly I used Problem Based Learning as learning media in learning, depend on material that I am going to teach.” (H)

Teacher added, I use.....

“...projector to delivered material by providing videos or images related to the material being studied (observing), students or teachers asking and answered questions related to the topics discussed (questioning). Ask students to add the information from the other sources (Collecting information), Confirm the data with the teacher (Associating) and students convey their work orally or in writing (communicating).” (H)

“In implementing this approach was quite difficult even though I can implement all the stages. Based on 2013 curriculum, I used discovery or problem based learning. In observing, I used book, magazine, paper to support observing stage. Make a classroom discussion, give questions to trigger students’ critical thinking and students’ question (questioning). Teacher ask students to used their dictionary or other sources to collect the information and sometimes homework as a report from communicating stage or they make a written or oral report” (W)

“Discovery / inquiry learning is a learning models that i used to implementation of scientific approach and sometimes not all stages are reached. In observing, I explained the lesson to be

taught, after that the students are asked to ask questions while taking notes in a notebook. In experimenting or collecting data, I ask students to make classroom discussions. In Associating, students asking the teacher or friends to confirm the information that they get and the last stage, I asked students to make a report in written or orally”. (F)

“First of all I use discovery learning as a learning model to connect with scientific approach. In implementing of scientific approach is not easy as I imagine. Heee.... Here in implementation of this approach, I give stimulus to trigger their spirit (observing) and I divide students into discussion groups, provide material for them to discuss, ask them to ask and answer the question that are related to material taught and practice it with come forward to show their report.” (H)

“Teaching and learning process using a scientific approach can be implemented well with five stages and sometimes I used discovery in my teaching and learning process. Of the five stages in the scientific approach, the questioning stage must be paid more attention to because it is very difficult for students to ask questions. provide interesting bait or stimulus so that it can provoke them to take lessons with enthusiasm.” (WA)

The statement from the teacher is also supported by Vice Principal of Curriculum

“Alhamdulillah, the teaching and learning process using a scientific approach can be implemented well with five stages. Teachers play an active role in implementing the recommended scientific approach based on the K-13 curriculum which makes students as student-centered not teacher-centered. Facilities are provided by the school as a medium to support the learning process in the classroom. Questioning, collecting information, associating and communication stage can be carried out properly, based on teacher creativity. If the stimulus at the beginning of learning is good, God willing, the next stage will be easier for students to carry out.” (S)

“So far, the implementation of the scientific approach has been carried out, although the implementation has not been maximized. Such as facilities that support the teaching and learning process are still not fulfilled. Students are asked to observe the book, listen to the teacher's explanation and then are asked to answer questions and ask questions related to the material that has been observed. Previously students were asked to bring other sources such as books, articles or others to add information related to the material being studied.” (W)

“Teaching and learning process using a scientific approach can be implemented well with five stages. Teacher invite students to observe by reading a book, observe the examples around them that are related to the material involved in learning, students create and ask questions related to the material in learning, At the collecting information stage, students asked to read other sources than textbooks to find the most appropriate information in the classroom and for the last they perform or collecting the report in written or orally.” (UE)

“So far, teaching and learning process using a scientific approach can be implemented well with five stages. In observing, teacher invite students to observe by reading a book, observe the examples around them that are related to the material involved in learning, students create and ask questions related to the material in learning, At the collecting information stage, students asked to read other sources than textbooks to find the most appropriate information in the classroom. In associating, give examples to justify the data that has been obtained by students and for the last they perform or collecting the report in written or orally.” (MA)

“In implementing of scientific approach is quit hard, as we know there are five stages in scientific approach. From the Observing, questioning, experimenting, associating and communicating. We adapt to what we have, such as attracting students' attention by utilizing the surrounding environment or the creativity of the teacher. The demands of the K13 curriculum require students to be active, but sometimes teacher as a center. Students still fully need the guidance of teachers and not all of the teacher applied training of k13, so they feel unfamiliar with this approach.” (A)

The statement from the teacher and vice principal of curriculum is also supported by student's answer: Students added....

“Sometimes we have discussed about the material being taught, watching a video, play games like guessing games, and teacher ask us to take a note that related material taught.” (TH)

“We learn by reading textbooks, paying attention to examples of existing questions, then being asked to do exercises.” (AS)

“We are very happy to learn while playing games in class, very interesting. After playing, we were told to record what we got from the game, after that we made examples and did the work.” (H)

“Yes... we learn to use textbooks, once in a while we pay attention to the pictures brought by our teacher to observe and record the information that can be obtained.” (I)

“The teacher gave an explanation, gave some examples and we were told to come forward and the teacher asked us to take a note that related material was taught. After that do the exercise.” (R)

The problems in implementation of scientific approach of the 2013 curriculum in English teaching and learning at state junior high schools in Babat Toman

Researcher conducted interview to find out the problem faced by teachers on applying Scientific Approach used in English teaching based on the Curriculum 2013. Here, difficulties mean all the difficulties faced by teachers on applying 5 steps of scientific approach: observing, questioning, experimenting, associating, and communicating.

Teacher answered.....

“At the Observing stage, I feel there is no difficulty because in this activity, I convey in any way, until students start to be interested in learning with this scientific approach, sometimes, conclude the lesson briefly.” (H)

“What I have found that, students' lack of critical thinking, the students' difficulty in finding the answer of the problem, the students can't analyze the material and the students' shy to speak up and limitation time on implementing this approach.” (W)

“In teaching learning process, students are less active in asking questions, students felt bored, students felt confused in summarizes the report.” (F)

“Most of them can't speak English well. They often stop their presentation because there were some words that they didn't know the meaning in English and they shy to answer and ask question.” (H)

“Students got difficulty to make presentation because they cannot speak English well caused lack of vocabulary mastery and some students not confident, students are less active in asking questions”. (WA)

The solutions to solve the problems in implementing of Scientific approach of the 2013 Curriculum in English teaching and learning at State Junior High Schools in Babat Toman

“To solved the problem, teacher gave some motivation to the students in order that they will be more active, emphasized them the importance of English and told the students that the successful of teaching learning proses is depend on the students, not only depend on teacher, try to managing the time.” (W)

“teacher gave some motivations to the students in order that they will be more active, provide an interesting media so that students are motivated to speak up, become guide to helped them by translating what are the students' difficult words.” (H)

“teacher gave some motivations to the students in order that they will be more active, provide an interesting media so that students are motivated to speak up, become guide to helped them by translating what are the students' difficult words.” (U)

“Here, as a teacher helped them by translating what are the students' difficult words.” (AS)

“Then teacher stimulated them by giving the comparisons. The recent material compared with the previous materials. Then students understood the way to analyze, and the discussion be continued.” (WA)

Observation

Learning with a scientific approach is the process of planned in such a way that students actively through the stages of observing, questioning, trying and communicate. To obtain data on the implementation of the scientific approach conducted with observation checklist Based on observations on the implementation of scientific attachment can generally be seen in the table below:

Table 6. *Teacher comprehension in implementation of scientific approach*

No	Statements	Score	Total Score	Percentage
1.	S1-S20	221	400	55.25 %

Based on researcher's observation, the implementation of scientific approach from five stages is 55.25%. Next, it is categorized based on Arikunto (2007). From the result, 55.25% includes 41% - 60% that is categorized as good. The implementation of scientific approach from five stages is categorized as good. All of the stages of the scientific approach (observing, questioning, experimenting, associating and communicating) are implemented in teaching English. Although the frequency for each stage was varied, there is no stage that has 0% or not done at all.

In addition, Komariah (2016) claimed that in communicating stage, the teacher acted as a facilitator and confirmed if there was a mistake in the materials. In another side, the most rarely performed activity is asking the students to make an oral report with 25%. The teachers rarely applied this activity because usually the time is up at the end of the teaching and learning process. The teachers do not have much time to ask the students communicate the result one by one for every student.

Document review

Documents which were taken from Junior High Schools in Babat Toman from the lesson plan of the teacher of English in learning models, scientific approach stages and media used in implementation of scientific approach in English teaching and learning, it was not relevant to the results of interviews conducted previously, in the interview the teacher said that in the learning process the teacher used the book however from the lesson plan the learning media used projector. While the learning model used by the teacher was discovery learning. Teacher cover all syntax of the approach.

Table 7. *Syntax of the approach which the teachers applied*

Schools	Teachers	Learning model	Syntax	Media use
Junior High School 1 in Babat Toman	H	Discovery learning	Observing Questioning Collecting Information/Experimenting Associating Communicating	Pictures (Proyektor, laptop and speaker) Dialogue (students book) Video
Junior High School 2 in Babat Toman	W	Discovery learning	Observing Questioning Collecting Information/Experimenting Associating Communicating	Pictures (Proyektor, laptop and speaker) Dialogue (students book) Video
Junior High School 3 in Babat Toman	F	Discovery learning	Observing Questioning Collecting Information/Experimenting Associating Communicating	Pictures (Proyektor, laptop and speaker) Dialogue (students book) Video
Junior High School 4 in Babat Toman	H	Discovery learning	Observing Questioning Collecting Information/Experimenting Associating Communicating	Pictures (Proyektor, laptop and speaker) Dialogue (students book) Video
Junior High School 5 in Babat Toman	WA	Discovery learning	Observing Questioning Collecting Information/Experimenting Associating Communicating	Pictures (Proyektor, laptop and speaker) Dialogue (students book) Video

Discussion

The implementation of scientific approach of the 2013 curriculum in English teaching and learning at State Junior High Schools in Babat Toman

After the data had been analyzed and triangulated, teachers of Junior High Schools in Babat Toman have implemented scientific approach. First, teachers used models of learning stated by Regulation of Ministry of Education and Culture No.22 year (2016). Discovery Learning is learning models used. Discovery learning is to understand concepts, meanings, and relationships, through an intuitive process to finally arrive at a conclusion (Budiningsih, 2005). The syntax of the Discovery Learning model is 1) Giving stimulation (Stimulation); 2) Statement/Identification of problems (Problem Statement); 3) Data collection (Data Collection); 4) Verification, and 5) Draw conclusions / generalizations (Generalization).

Except learning model, five stages of scientific approach or syntax such as observing, questioning, experimenting, associating, and communicating are also applied by teachers in the teaching process. In implementing this five stages used different strategies, for example using existing facilities by using a projector or other interesting media, asking questions or answering questions. Bester & Brand (2013) stated that achievement will be very likely to improve if a technology is used in a lesson to capture the attention of learners and to maintain their concentration. It is meant that the media have a positive effect on students' achievement.

In conclusion, in implementing of scientific approach, teacher has to choose what media being used in learning, teacher need managing the time, facilitate students with media used. Apriani's research (2015). In her research, the teachers stated that they implemented Scientific Approach by

asking the students to observe and identify the objects of observation in observing stage; giving opportunity to the students to ask in questioning stage; giving time and facilitating students to find the information related to the material; asking the students to discuss the information that was received in the group discussion and designing the discussion result that would be presented in communicating stage.

The problems in implementation of scientific approach of the 2013 curriculum in English teaching and learning at state junior high schools in Babat Toman

After the data had been analyzed and triangulated, teachers of Junior High Schools in Babat Toman have implemented scientific approach. Scientific approach is a scientific-based approach that can make students independent, critical thinking, creative and etc. In applying this approach there will be problems. As mentioned from the results of interviews, students' lack of critical thinking, the students difficulty in finding the answer of the problem, and the students' shy to speak up And from the students can't analyze the material. And limitation time on implementing this approach is one of the problems. The students' lack of critical thinking; the students' difficulty in finding the answer of the problem; the students's inability in analyzing the material; and the students' lack of vocabulary mastery.

The solutions to solve the problems in implementing of Scientific approach of the 2013 Curriculum in English teaching and learning at State Junior High Schools in Babat Toman

In implementation of Scientific Approach of the 2013 Curriculum at State Junior High Schools in Babat Toman. When problems come, of course you will need a solution to overcome. The solutions used by the teachers to overcome the problem in applying Scientific Approach were: motivating the students to be more active in learning, giving some stimulates questions related to the material, comparing between the recent material and the previous materials, and translating the difficult words found by the students to solved the problem, teacher gave some motivation to the students in order that they will be more active, emphasized them the importance of English and told the students that the successful of teaching learning

proses is depend on the students, not only depend on teacher, try to managing the time. Whereas, Wahyu (2015) claimed that by giving the material with the media, picture or real object, it would stimulate the students to elaborate their knowledge into the next stage. The media will also make the students feeling curious to know about the material.

CONCLUSION

Based on the data analysis and the discussion, it can be concluded that the procedures used by teachers in teaching English were: Observing, Questioning, Experimenting, Associating, and Communicating. Those steps were written in the lesson plan as the rule of teacher in conducting teaching learning process in implementing of scientific approach. Learning models used was discovery learning which the stages of the discovery learning model reflect the stages of the scientific approach.

The difficulties faced by teachers in implementing Scientific Approach were: the students' lack of critical thinking; the students' difficulty in finding the answer of the problem; the students's inability in analyzing the material; and the students' lack of vocabulary mastery. The solutions used by the teachers to overcome the problem in applying Scientific Approach were: motivating the students to be more active in learning, giving some stimulates questions related to the material, comparing between the recent material and the previous materials, and translating the difficult words found by the students.

REFERENCES

- Afrianto. (2017). The implementation of scientific approach for teaching English in Senior High school: voices from the field. In *Advances in Social Science, Education and Humanities Research (ASSEHR), Volume 110 Fifth Internasional seminar on English Language and Teaching (ISELT 2017)*, (pp. 183-1910. <https://doi.org/10.2991/iselt-17.2017.33>).
- Apriany, L., Afrianto., Nababan, M. (2014). *The implementation of scientific approach in teaching English in senior high school Pekanbaru*. Universitas Riau: Universitas Riau.
- Arikunto, S. (2012). *Prosedur penelitian suatu pendekatan praktik*. Jakarta, Indonesia: Rineka Aksara.
- Azizah, S., Ariwidodo, E., & Adriana, I. (2015). Implementasi pendekatan saintifik dalam

- pengajaran Bahasa Inggris kurikulum 2013 di SMPN 1 Pamekasan. *OKARA 2 (X)*, 181-200.
- Bester, G. &. (2013). The effect of technology on learner attention and achievement in the classroom. *South African Journal of Education*, 33 (2).
- Budiningsih, A. (2005). *Belajar dan pembelajaran*. Jakarta: Rineka Cipta.
- Denzin N. K. (2006). *Sociological methods: A sourcebook* (5th ed). New York: Aldine Transaction.
- Hidayati, N. (2014). Pengaruh penggunaan pendekatan ilmiah (scientific approach) dalam pembelajaran terhadap hasil belajar peserta didik kelas XII 1 SMK Negeri 7 Surabaya pada standar kompetensi mengoperasikan sistem kendali elektromagnetik. *Jurnal Pendidikan Teknik Elektro*, 25-29.
- Jaedun, A. H. (2014). An evaluation of the implementation of curriculum 2013 at the building construction department of vocational high schools in Yogyakarta. *Journal of Education*, 14-22.
- Kirkpatrick, R. (2016). *English language education policy in Asia*. Switzerland: Springer.
- Kurniasih, I. &. (2014). *Implementasi kurikulum 2013: Konsep dan penerapan*. Surabaya, Indonesia: Kata Pena.
- Longman. (2014). *Dictionary of contemporary English for advanced learners*. Pearson Education Limited.
- Ministry of Education and Culture. (2007). *Standar kualifikasi akademik dan kompetensi guru*. Jakarta: Departemen Pendidikan dan Kebudayaan.
- Ministry of Education and Culture. (2016). *Materi pelatihan implementasi kurikulum 2013*. Jakarta, Indonesia: Kemendikbud.
- Musfiqon, H. M. (2015). *Pendekatan pembelajaran saintifik*. Sidoarjo: ISBN 978-602-72376-0-5.
- Regulation of Ministry of Education and Culture. (2013). *Modul pelatihan implementasi kurikulum 2013*. Jakarta, Indonesia: Badan Pengembangan Sumber Daya Manusia Pendidikan dan Kebudayaan.
- Regulation of Ministry of Education and Culture. (2013). *Peraturan menteri pendidikan dan kebudayaan Np. 22 tahun 2013 tentang standar proses pendidikan dasar dan menengah*. Jakarta, Indonesia: Kemendikbud.
- Regulation of Ministry of Education and Culture. (2016). *Peraturan menteri pendidikan dan kebudayaan RI No. 22 tahun 2016 tentang standar penilaian pendidikan*. Jakarta: Kementerian Pendidikan dan Kebudayaan.
- UNESCO. (2015). *The curriculum in debates and in educational reforms to 2030: For a curriculum agenda of twenty-first century*. Genoa: IBE Working Papers on Curriculum Issues No. 15.
- Winarso, W. (2015). *Dasar pengembangan kurikulum sekolah*. Cirebon: Confident.
- Zeki, C. P. (2009). The importance of non-verbal communication in classroom management. *Procedia Social And Behavioral Sciences*, 1, 1443-1449.

Dara Novitasari, Ismail Petrus, & Machdalena Vianty

The implementation of scientific approach of the 2013 curriculum at state junior high schools