

**THE IMPLEMENTATION OF SCIENTIFIC APPROACH IN
TEACHING ENGLISH AT SMP MUHAMMADIYAH 4
SURAKARTA**



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by

SUCI CAHYANING SETYO SOLIKAH
A320110010

**SCHOOL OF TEACHER TRAINING AND EDUCATION
MUHAMMADIYAH UNIVERSITY OF SURAKARTA**

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Jl. A. Yani Tromol Pos I-Pabelan, Kartasura Telp. (0271) 717417 Fax. 715448 Surakarta 57102

Surat Persetujuan Artikel Publikasi Ilmiah

Yang bertandatangan di bawah ini pembimbing skripsi:

Nama : Aryati Prasetyarini, M. Pd

NIK : 725

Nama : Drs. Djoko Srijono, M. Hum.

NIP : 19590601 198503 1 003

Telah membaca dan mencermati naskah artikel publikasi ilmiah, yang merupakan ringkasan skripsi mahasiswa:

Nama : Suci Cahyaning Setyo Solikah

NIM : A. 320110010

Program Studi : Pendidikan Bahasa Inggris

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Pembimbing I

Aryati Prasetyarini, M. Pd

NIK: 725

Pembimbing II

Drs. Djoko Srijono, M. Hum.

NIP: 19590601 198503 1 003

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SUCI CAHYANING SETYO SOLIKAH

A320110010

Email: sucienglish@gmail.com

Muhammadiyah University of Surakarta

ABSTRACT

This research aims at finding out the implementation of scientific approach in SMP Muhammadiyah 4 Surakarta, specifically it is to describe i.e. method implemented by the English teacher, teaching technique used by the English teacher, the procedure of the method applied, and the evaluation and problems faced by the teacher in implementing scientific approach in teaching English at SMP Muhammadiyah 4 Surakarta, in 2014/2015 academic year. The data of this research are collected in the form of field notes, lesson plan, syllabus, assessment form, and interview notes. The writer takes English teacher and eighth grade students of SMP Muhammadiyah 4 Surakarta as the subject of this research. The writer uses descriptive qualitative research especially spiral research in analyzing the data. The result of the study shows that the teacher applies inquiry-based learning as the method and lecturing and answering question as the techniques in the implementation of scientific approach. There are three phases in teaching learning process of scientific approach namely; pre-teaching, whilst-teaching, and post-teaching. Whilst-teaching consists of five phases, namely observing, questioning, gathering information or experimenting, associating, and communicating. The English teacher of the eighth grade students at SMP Muhammadiyah Surakarta uses authentic assessment for the evaluation. It covers three aspects namely, cognitive aspect, affective aspect, and psychomotor aspect. The English teacher uses writing test, oral test, daily assignment, mid test and final test to assess the cognitive aspect of the students. She uses practice and portfolio assessment in assessing psychomotor aspect. The last, she uses observation, self-assessment, peer assessment and journal in assessing affective aspect.

Keywords: *implementation, scientific approach, teaching English*

A. Introduction

According to Hidayat (2013: 65) approach is the point of departure or point of view to learning process. There are some approaches which were implemented in education system based on its curriculum in Indonesia, namely education principles settled by Pancasila in the 1947 Curriculum, pancawardhana program in the 1964 Curriculum, learning's way of active student or in Indonesian it is called *Cara Belajar Siswa Aktif (CBSA)* in the 1984 Curriculum, content oriented in the 1994 and 1999 Curriculum, and the last one which is still going on is scientific approach in the 2013 Curriculum.

The first one is education principles settled by Pancasila in the 1947 Curriculum. It focuses on human development based on Pancasila to be freemen. The second one is pancawardhana program in the 1964 Curriculum. Pancawardhana here means creation, feeling, will, work, and moral. The government focuses on how to give provisions to Indonesians which get education in elementary school. The third one is learning's way of active student in the 1984 Curriculum. It is learning approach which gives a chance to students to be active and mixed up with learning process physically, mentally, intellectually, and emotionally. The fourth one is content oriented in the 1994 and 1999 Curriculum. In this approach, students are focused on receiving more materials which are not appropriate to their level. The last one and the newest which is still going on is scientific approach

Scientific approach is an approach which focuses on making students practice scientific procedures in their learning process. In scientific approach, students should be critical, sensitive to others, and faithful to God. The teachers function as the facilitators who make their students more active in and out of classroom.

SMP Muhammadiyah 4 Surakarta is one of schools in Surakarta which has been applying scientific approach in its teaching-learning process especially in

teaching English. There are some reasons which make this school so interesting for the researcher. Most of the students come from bourgeoisie society which makes the teachers do more effort to make them understand the materials especially English. The researcher has experienced teaching English in this school when she was at Field Experience Program or in Indonesian, it is called *Program Pengalaman Lapangan (PPL)*. The researcher asked the English teacher what method should be implemented in teaching English, and the teacher said that either inquiry-based learning or problem-based learning is all the same. It means that the English teachers in this school have implemented scientific approach although they do not wholly implement scientific approach yet. It makes the researcher want to know what method is actually implemented and the procedures applied in this school. So it is interesting for her in doing a research of implementation of scientific approach in teaching English in this school.

From the explanation above, the researcher would like to conduct a research especially on the implementation of scientific approach in teaching English at SMP Muhammadiyah 4 Surakarta. Thus, the researcher decides to conduct a research entitled **THE IMPLEMENTATION OF SCIENTIFIC APPROACH IN TEACHING ENGLISH AT SMP MUHAMMADIYAH 4 SURAKARTA**.

Eki Juvita Prima Wahyuni (2014) conducted a study entitled '*Utilizing Scientific Approach through the Presentation, Practice and Production (PPP) Strategy to Enhance Writing Skills of Recount Texts of the Eight Graders of SMP Negeri 1 Cerme Gresik*'. The result of the study showed that the implementation of Scientific Approach through the Presentation, Practice and Production (PPP) strategy in teaching and learning activities can improve the students' writing ability of recount texts. The improvement can be seen from the criteria of success which is the students' score is above 78. The success was met in the Cycle 2.

More than 50% of the students' score was above 78 and the activities checklist showed that the class active involvement was higher than 75%.

Yuniati Ulfah Milatasari (2012) conducted a study entitled '*Improving Students' Ability in Writing through Inquiry-based Learning (A Classroom Action Research at The Tenth Grade of SMA N 3 Sukoharjo in The Academic Year of 2011/2012)*'. The result of the research showed that the implementation of Inquiry Based Learning could improve the students' writing ability including content, organization, vocabulary, grammar and mechanics. They could also write in appropriate stages including prewriting (outlining), writing, and rewriting. By comparing the pre-test score and the post-test score, there was an improvement in writing elements. Their mean score of the pre-test was 72.04, while their mean score of the post-test 1 was 75.92, and their mean score of the post-test 2 was 79.60. The mean score of language use in post-test 2 was 18.60. It is better than the pretest 14.92 and the post-test 1 17.17. Their mean score of mechanics in pre-test was 3.42. It increased into 3.82 in post-test 1 and 4.00 in post-test 2. Their motivation also increased. They were enthusiastic than before in teaching writing. In the implementation, there were some strengths of Inquiry Based Learning such as making the students more confident and active, developing their critical thinking, and understanding the concept.

Andriyani Mudrikah (2012) conducted a study entitled '*The Implementation of Inquiry-based Learning in Teaching Writing at The First Year of SMA Negeri 1 Gemolong, Sragen*'. The research finding shows that Inquiry-based Learning is the best and the appropriate learning that can be used to develop students' motivation in writing especially in writing descriptive text for the first year student of SMA Negeri 1 Gemolong, Sragen. The objective of teaching writing at the first year students of Senior High School is to enable students to express their ideas in the form of written language. The teaching materials can be many sources. The teacher not only takes the material from the English textbooks

but also he uses teacher-made materials. The classroom activities are appropriate with the procedure of Inquiry-based Learning, consisting three stages exploration, elaboration, and confirmation.

This study aims at finding out the implementation of scientific approach in SMP Muhammadiyah 4 Surakarta, specifically it is to describe i.e.method implemented by the English teacher, teaching technique used by the English teacher, the procedure of the method applied, and the evaluation and problems faced by the teacher in implementing scientific approach in teaching English at SMP Muhammadiyah 4 Surakarta, in 2014/2015 academic year.

B. Research Method

The data of this research are collected by analyzing document, observation, and interview. The first one, the writer gathers written information from materials such as field note, materials, lesson plan, handbook, and syllabus which are used by English teacher of eighth grade in SMP Muhammadiyah 4 Surakarta as the evidence of the research. The second one, the writer observes the English teaching-learning process of the eighth grade in SMP Muhammadiyah 4 Surakarta. The last, the writer interviews English teacher of the eighth grade in SMP Muhammadiyah 4 Surakarta about the problems she faced in adopting scientific approach in teaching English. The writer takes English teacher and eighth grade students of SMP Muhammadiyah 4 Surakarta as the subject of this research. The writer uses descriptive qualitative research especially spiral research in analyzing the data.

C. Result and Discussion

This research is presentation of the teaching English using scientific approach to the eighth grade students at SMP Muhammadiyah 4 Surakarta. This study is done at SMP Muhammadiyah 4 Surakarta from 28th January 2015 until 29th January 2015. This study is done to get information about the implementation

of scientific approach in teaching English to the eighth grade students of SMP Muhammadiyah 4 Surakarta.

1. The Implementation of Scientific Approach in SMP Muhammadiyah 4 Surakarta

a. Method Implemented by the English Teacher

According to Hidayat (2013: 65), method is a way in achieving something. There are five methods which are presented in the previous chapter namely; discovery learning, inquiry-based learning, problem-based learning, project-based learning, and task-based learning. Based on the observation in teaching-learning activities from the first observation (Wednesday, January 28th, 2015 at lesson 1-2 (07.00-08.30) in 8 D class, second observation (Wednesday, January 28th, 2015 at lesson 3-4 (08.30-10.00) in 8 A class, third observation (Wednesday, January 28th, 2015 at lesson 5-6 (10.00-11.30) in 8 B class, fourth observation (Thursday, January 29th, 2015 at lesson 1-2 (07.00-08.30) in 8 C class, and fifth observation (Thursday, January 29th, 2015 at lesson 3-4 (08.30-10.00) in 8 E class of SMP Muhammadiyah 4 Surakarta in 2014/2015 academic year, the researcher found that the English teacher (Mrs. H. S.) usually adopts inquiry-based learning to teaching English.

Hamdayama (2014: 31) and (Hosnan, 2014: 341) say that inquiry-based learning is a series of learning activities that emphasize critical thinking and analytical processes to seek and find students' own answers from a problem that is questioned. The role of the students is to develop new knowledge by restructuring their previous understanding from experience they get. In inquiry-based learning, students can work cooperatively and collaboratively to solve problem. They do not choose an answer from the teacher's given answers like in multiple choices, but they solve the problem and find the answer by themselves.

In inquiry-based learning, the activities are directed for students to seek and to find the answers by themselves from something that is questioned. The teacher in the classroom acts as the facilitator so that the students will answer the questions as a part of the thinking process.

b. Teaching Techniques Applied by the English Teacher

Teaching technique is kind of strategy or tactic used by the teacher to teach her/ his students. Teaching technique is related to classroom activities. To get the data, the researcher followed English teacher in the classroom and then took a note all the activities in the classroom. In the classroom activities, the researcher found that the teacher used some techniques such as lecturing, discussion, and questioning. The researcher found the techniques which were applied by English teachers at SMP Muhammadiyah 4 Surakarta based on classroom activities and document. The teaching technique applied by English teacher can be described as follows:

1). Pre-teaching

Pre-teaching is one of activities which is done to open teaching-learning process. It was started by praying together and reciting Al-Quran such as *Al-Qari'ah* and *At-Takasur* if the teaching-learning process was started at lesson 1-2. If the teaching-learning process was started at lesson 3-4, the teacher usually only greets students by reciting “*Assalamu’alaikumwarohmatullohi Wabarokatuh*” and “good morning” or “good afternoon” without praying and reciting Al-Quran.

After praying and greeting, the teacher introduced materials that they were going to be studied and prepared to watch presentation using pictures with Liquid Crystal Displays (LCD) or computer.

2). Whilst-teaching

There are five phases in whilst-teaching as follows:

- a). Observing: students observed two pictures which were presented by the teacher with Liquid Crystal Displays (LCD). In this phase, the teacher used lecturing technique to explain the pictures.
 - b). Questioning: students asked the teacher what they did not know about materials such as generic structure of expressing *comparative* and *superlative*. In this phase, the teacher used questioning technique.
 - c). Gathering information or experimenting: students were given same materials with different pictures such as house, condition, car, etc. In this phase, the teacher used lecturing technique to explain the pictures.
 - d). Associating or information processing: students discussed and asked questions to each other about the materials. They discussed it in small group with their friend on the same table. However, they were allowed to discuss it with friend on other tables. In this phase, the teacher used discussion technique to make students actively involved in classroom activities.
 - e). Communicating: students made a conclusion about the materials and evaluated the materials with the teacher. In this phase, the teacher used lecturing technique to evaluate the materials.
- 3). Post-teaching

Post-teaching is the last activity to end the teaching-learning process in the classroom. Teacher gives homework to students. After that, she ends the teaching-learning process by reciting “*Alhamdulillahirabbil’alamin*” together.

c. The Procedure of Inquiry-based Learning

a. Classroom Procedure of the Implementation of Scientific Approach in Teaching English

According to Hosnan (2014: 343) and Hamdayama (2014: 34-35), there are six steps of inquiry based learning, namely orientation, formulating problem, formulating hypotheses, collecting data, testing the hypothesis, and drawing conclusion. According to them, inquiry-based learning classroom activities start from fostering the students to be ready to start learning, setting up students' willingness to have activity, bringing the students to a challenging issue for learners to break it out. After that, students make a temporary answer of the problem. It must have a solid foundation of thinking. Next, the students capture and search for related information determine the acceptable answer and finally describe the findings.

Based on the research finding, in observing all of students prepared their book and also prepared themselves after the teacher gave the instruction. The next activity was giving an issue. It was two pictures on the board which had difference each other. In questioning, the teacher gave a question to stimulate the students to think. The teacher asked the students if there is the difference between the two pictures displayed.

In gathering information or experimenting, the teacher gave another issue such as giraffe and rabbit, two houses, two cars, and condition A and condition B and the teacher gave another case of comparative in a written form. In associating or information processing, the teacher displayed three pictures i.e. pencil A, pencil B, and pencil C. The students searched for the difference to compare and made a conclusion about the case and then they discussed it with their

friends. In communicating, the students and the teacher drew a conclusion for that day's lesson.

b. The Medium and Source Materials

The material of teaching English to the eighth grade students of SMP Muhammadiyah 4 Surakarta is textbook entitled "BukuWajibSiswa SMP Kelas VIII". The English teacher at SMP Muhammadiyah 4 Surakarta uses some media to support teaching-learning process in the classroom. Those media are computer, LCD (Liquid Crystal Display), computer, flash disk, and picture.

d. The Evaluation

Evaluation is done to measure the capability of the students. The English teacher of the eighth grade students at SMP Muhammadiyah Surakarta uses authentic assessment in the evaluation. It covers three aspects namely, cognitive aspect, affective aspect, and psychomotor aspect. According to Hosnan, (2014: 390) assessing affective aspect can use observation, interview and questionnaire, essay, question the opinion, inventory, and sosiometri and assessing psychomotor aspect is done during teaching and learning activities. To assess the students' works can be daily tests, exercises, assignments, interview, observation, questionnaire, field note, portfolio, and so on (Nurgiyantoro, 2011: 25).

Based on the research finding, the English teacher uses writing test, oral test, daily assignment, mid test and final test to assess the cognitive aspect of the students. She uses practical work and portfolio in assessing psychomotor aspect. The last, she uses observation, self-assessment, peer assessment and journal in assessing affective aspect.

2. Problems which are Faced by the Teacher in the Implementation of Scientific Approach in Teaching English at SMP Muhammadiyah 4 Surakarta

There are some problems faced by the teacher in teaching English. The first problem is the capability of the teacher. The English teacher does not do her role yet in teaching-learning process in the classroom. The teacher is still as learning source in the teaching-learning process and not as a regulator of environment or regulator of interaction. The role of the teacher as facilitator is still in low level because she just asks the same question. It makes the ability of students to answer every question as a part of the process of thinking is also in low level.

The second problem is the capability of the students. The students have lack of motivation to learn more actively, lack of deep understanding, and knowledge. The lacks of the students are the lack of students' skill. It is especially English skill of the students is in low level. The students are not used to practice English in the class. They just use English when answer the question or reveal the solving of a problem. However they do not use it when they have discussion with their friends or with the teacher.

Generally, the researcher can conclude that based on the discussion above, there is compatibility between the research finding in SMP Muhammadiyah 4 Surakarta and the Hosnan's theory of inquiry based learning. Inquiry-based learning method in SMP Muhammadiyah 4 Surakarta emphasizes on the development of cognitive, affective, and psychomotor aspects equally, so that inquiry based learning is considered more meaningful. It helps students to think and formulate hypotheses with their own initiative, to give intrinsic satisfaction, to think logically, and to express opinions verbally. However the implementation of inquiry-based learning method in SMP Muhammadiyah 4 Surakarta has some weaknesses such as it is difficult to control the activities and the success of

learners, it takes a long time in the implementation so that educators are often difficult to adapt to the predetermined time.

D. Conclusion

Based on the research finding, the English teacher of SMP Muhammadiyah 4 Surakarta adopted inquiry-based learning as the method and the teacher used some techniques such as lecturing, discussion, and questioning in teaching English to the eighth grade students at SMP Muhammadiyah 4 Surakarta.

Hamdayama (2014: 31) and (Hosnan, 2014: 341) say that inquiry-based learning is a series of learning activities that emphasize critical thinking and analytical processes to seek and find students' own answers from a problem that is questioned.

There are three processes in teaching learning adopting scientific approach namely; pre-teaching, whilst-teaching, and post-teaching. Whilst-teaching consists of five phases, namely observing, questioning, gathering information or experimenting, associating, and communicating.

According to Hosnan (2014: 343) and Hamdayama (2014: 34-35), there are six steps of inquiry based learning, namely orientation, formulating problem, formulating hypotheses, collecting data, testing the hypothesis, and drawing conclusion. According to them, inquiry-based learning classroom activities start from fostering the students to be ready to start learning, setting up students' willingness to have activity, bringing the students to a challenging issue for learners to break it out. After that, students make a temporary answer of the problem. It must have a solid foundation of thinking. Next, the students capture and search for related informations, determine the acceptable answer and finally describe the findings.

Based on the research finding, in observing all of students prepared their book and also prepared themselves after the teacher gave the instruction. The next

activity was giving an issue. In questioning, the teacher asked the students if there is the difference between the two pictures displayed. In gathering information or experimenting, the teacher gave another issue such as giraffe and rabbit, two houses, two cars, and condition A and condition B and the teacher gave another case of comparative in a written form. In associating or information processing, the teacher displayed three pictures i.e. pencil A, pencil B, and pencil C. The students searched for the difference to compare and made a conclusion about the case and then they discussed it with their friends. In communicating, the students and the teacher drew a conclusion for that day's lesson.

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Based on the research finding, the English teacher uses writing test, oral test, daily assignment, mid test and final test to assess the cognitive aspect of the students. She uses practical work and portfolio in assessing psychomotor aspect. The last, she uses observation, self-assessment, peer assessment and journal in assessing affective aspect.

Mudrikah's study showed that the teacher has several problems in teaching writing, namely difficulty in improving students' vocabulary, limitation of time and lacking of teaching media. It is rather different with the research finding in this research.

There are some problems faced by the teacher in teaching English. The first problem is the capability of the teacher. The English teacher did not conquer yet about the concept of method in scientific approach. It can be seen as she wrote in her lesson plan that the method she used in teaching English is problem-based learning. When it should be written inquiry-based learning since the procedure and the principle in the teaching-learning process are more appropriate to inquiry-based learning than problem-based learning.

The second problem is the capability of the students. The students have lack of motivation to learn more actively, lack of deep understanding, and knowledge. The lacks of the students are the lack of students' skill. It is especially English skill of the students is in low level. The students are not used to practice English in the class. They just use English when answer the question or reveal the solving of a problem. However they do not use it when they have discussion with their friends or with the teacher. It is also difficult to control the activities and the success of learners, it takes a long time in the implementation so that educators are often difficult to adapt to the predetermined time.

Generally, the researcher can conclude that based on the discussion above, there is compatibility among the research finding in SMP Muhammadiyah 4 Surakarta, Fauziati's theory of scientific approach, the Hosnan's theory of inquiry-based learning, and the previous studies. It also can be said that the implementation of scientific approach in teaching English at SMP Muhammadiyah 4 Surakarta is implemented fully. Although there are some differences of problems faced by the English teacher in this research and the previous study. However the implementation of inquiry-based learning method in SMP Muhammadiyah 4 Surakarta has some weaknesses such as it is difficult to control the activities and the success of learners, it takes a long time in the implementation so that educators are often difficult to adapt to the predetermined time.

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