

Teacher's Understanding of The Scientific Approach Implementation in English Learning

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Abstract

Due to the importance of scientific approach to be applied in the English teaching context, this study is an endeavor to Analyze teacher's understanding of Scientific Approach in English teaching. To achieve this purpose, qualitative approach in form of case study design was employed. This study was conducted in a senior high school in West java, involving one English teacher as the research participant. The data in this study were obtained from interview then analyzed using inductive procedure. The result confirms that the teacher understands the general notion, aims, and stages in scientific approach yet the understanding on the stage of association as well as the principle of critical thinking are still low.

Keywords: *Scientific Approach, Teacher Understanding, English learning*

INTRODUCTION

Education is said to be successfully seen from the curriculum and what methods teachers use to teach their students by looking at the evaluation results after carrying out learning. In order to create a society that can keep up with the times. Education government, continues to innovate and innovate in the field of education, one of which is curriculum development and innovation, namely the 2013 curriculum. The Scientific Approach is one approach that must be applied in the teaching and learning process because the approach is suggested in the 2013 Curriculum which must use a science-based approach, including teaching English Learning with a scientific approach is a learning process in which students can actively observe, identify, find problems, formulate problems, collect data with various techniques, analyze data, draw conclusions and communicate from things "found" students (Mulyana, 2008). This follows the Kemendikbud (2013), providing the conception that: The scientific approach to learning includes components: observing, asking, trying, processing, presenting, creating and concluding. The scientific approach is a way of learning to facilitate students to gain knowledge or skills with procedures based on a scientific method (Kemendikbud, 2013).

However, the scientific approach is quite difficult because this approach is usually used in science learning and must be forced to be applied in English lessons which is certainly a challenge for teachers. This approach will be increasingly difficult to apply optimally in the learning process due to the Covid-19. Considering that offline learning is still done in a limited way after yesterday's online learning, this should be the main focus of teachers and schools in applying the Scientific Approach to the maximum, both offline and online learning.

Different levels of student understanding can make some students fall behind in understanding the material given. Therefore, the teacher needs an innovative and creative solution to get control of the problem of applying a scientific approach, because the teacher is the main factor in the successful implementation of the learning curriculum (Mulyasa, 2013). The teacher as someone who has an important role in education must have the expertise and authority in carrying out the learning process. Careful learning planning can also achieve the expected learning objectives. This is in accordance with the research results of Widyaningrum, Sugiharto and Sugiyo (2017) that in the application of learning using a scientific approach requires careful planning.

In this regard, many researchers have researched this scientific approach which discusses the application of the scientific approach in schools (Sodik & Wijaya, 2017), (Kasim, 2017), (Suherdi, 2017) (Ratnaningsih, 2017), (Sarwanti, 2016) and (Masithoh, 2018). Furthermore, other studies that discuss scientific research in non-English learning, such as in history lessons (Nurcahyo & Djono, 2018), geometry (In'am & Hajar, 2017), PPkn (Haq & Murdiono, 2019) and science (Ayadiya & Sumarni, 2015) and (Asrizal, 2018). Then, Rohita (2018), found in the results of his research that out of 92 kindergartens that provided daily lesson plans, only 14 of them included a scientific approach in their lesson plans and only 7.14% of teachers were able to describe the scientific approach in their lesson plans with correct. This means that there are still many teachers who have not been able to understand making good plans related to the application of the scientific approach.

Based on the problems and previous research discussed, this study seeks to describe teachers' understanding of the Scientific Approach in learning English in applying the scientific approach to teaching. So, the researchers conducted a study with the title "Teacher's Understanding of The Scientific Approach Implementation in English Learning".

METHODS

This research uses descriptive qualitative. In qualitative research design, this research design is very suitable for this research because it fulfils the characteristics of qualitative research to investigate natural phenomena in teachers' understanding of scientific approaches in learning English. Margono (2004) states that the design of this study provides accountability for all steps to be taken. Specifically, this research is a case study where a method that requires investigating a case through detailed data collection involving various sources of information and the strength of the case study also provides a holistic and rich understanding of a case in real life (Hudaya 2016: 46).

The participant in this study was an English teacher at a high school in Garut whose teacher had applied a scientific approach during the learning process. This study uses interviews as an instrument to help obtain data. Interviews used by researchers here will use structured interviews so that when conducting interviews, the researchers are ready. After the data was obtained, the authors analyzed the data in the form of reports and descriptive descriptions. Activities carried out in analyzing data or reducing, displaying data, and drawing conclusions (Maleong, 2010).

FINDINGS AND DISCUSSION

This section consists of research results and research discussions. Researchers analyze and describe data from the results of interviews with high school teachers. Then the researcher combines findings with literature related to the discussion.

Findings

Based on the results of the interviews, the teacher uses this scientific approach in learning English in his class. Teachers also know that this approach is an approach that is in the curriculum which means it must be applied in learning.

“Karena sekarang masih kurikulum 2013 yang masih dipakai ya, jadi pendekatan Scientific Approach ini pembelajaran yang disarankan oleh kemendikbud, karena sudah ada didalam kurikulum aturannya jadi guru harus menggunakan ini”

The 2013 curriculum mandates the essence of a scientific approach in learning, so this approach must be applied at various school levels. The teacher implements a scientific approach in almost every lesson using various methods adapted to the characteristics of the material. In the implementation of learning, the teacher has also carried out learning activities in accordance with the stages of the scientific approach that have been determined in the series of learning plans (RPP).

“Dimana pendekatan scientific itu pembelajaran yang menggunakan kaidah-kaidah keilmuan. Pendekatan scientific atau metode ilmiah pada umumnya sama ya seperti yang ada di RPP yaitu membuat serangkaian aktivitas seperti pengumpulan data melalui observasi, menanya dan eksperimen atau mengolah data sampai dengan mengkomunikasikannya”

Here the teacher facilitates students to carry out activities that allow students to gain knowledge, skills and attitudes as a whole through this scientific approach activity. The implementation of the learning itself the teacher uses the reference component of learning which is said to be as follows:

“seperti biasa saja pembelajaran di lakukan dalam 3 tahapan, yang pertama kan pasti ya kita pembukaan dulu dikelas sama anak anak, terus pembelajaran intinya pakai pendekatan ilmiah dan pastinya terakhir kita penutupan kesimpulan terakhir pembelajaran”

This means that in applying this approach the teacher uses the opening stages as a prefix in the classroom, the core stages in which there is a scientific application, and finally the closing activities for learning.

“Ya yang pertama pastinya kalau mulai belajar pasti pembukaan dahulu, seperti menyapa anak-anak, bertanya kehadiran, juga pengenalan sekilas materi yang akan dibahas”

First, before starting the learning process, the teacher conducts initial introductory activities by greeting or greeting students first with a happy intonation so that the initial learning atmosphere is pleasant and can help students to follow the learning process well and don't forget to check the absence of students so that the learning atmosphere feels better. Familiar. Then the teacher also conveys the scope of the material and an explanation of the description of the activities that will be carried out by the students according to the syllabus before the core learning begins.

Furthermore, teachers in these activities are asked to apply a scientific learning approach. The core activity in the scientific method is aimed at building the concept of learning for students with the help of the teacher through the steps of applying the scientific approach in learning activities.

"dalam kegiatan inti itu menerapkan pendekatan ilmiah, yang pertama dilakukan adalah observasi missal mau belajar deskriptif teks ya, disini siswa melakukan pengamatan pada media yang telah diberikan, misalnya kucing, jadi siswa diminta mengamati itu."

The first indicator in implementing learning using this approach is observing. In the results obtained at this stage, the teacher presents a material or object that can be observed by students. For example, when you want to teach about descriptive text material about cats. The teacher must prepare the object of observation, namely a cat, here the teacher can invite students to see the cat directly or can use the media image or photo of a cat to be shown to students and observed in detail. Next in the second stage is questioning, the teacher here encourages students to ask questions to make a problem statement from what has been observed.

“setelah siswa mengamati kucing secara detail, kemudian siswa itu diminta membuat pertanyaan tentang kucing untuk memudahkan mencari informasi tentang kucing tadi ya, misalnya pertanyaan ‘berapa kaki yang dimiliki kucing itu?’ “

The formulation of this question is useful for students to make it easier to find information about the cat. If students have difficulty in formulating questions, the teacher can provide guidelines for making effective questions. Then the third is an experiment to do something and solve a problem.

“tahap ketiga ini saya mulai mengelompokan siswa untuk melakukan pemecahan masalah tadi yang sudah dirumuskan”

At this stage, the teacher makes students into groups with the aim of students being able to solve the problem formulations that are difficult for students to make. Here also students can share information or the characteristics of the observed cat object. Next is reasoning, here students process information from the results of their observations and then they are encouraged to look for references from various sources other than those already obtained.

“dalam penalaran siswa diharuskan mencari referensi lain dari karakteristik kucing seperti dari buku, itu utama ya atau bisa mencari referensi lain seperti diinternet tapi info nya harus valid”

This means that students are required to process information from observations and they are required to seek additional information about the object of their observation from valid sources such as books or journals on the internet in order to confirm the truth of the information obtained. After everything is obtained, each student composes the descriptive text correctly and presents the results in front of the class.

“sesudah semuanya beres siswa bisa mempresentasikannya didepan kelas”

And the last is communicating, where students compile the results of their observations into descriptive text and then read the results of their work in front of the class. The role of the teacher at this last stage is to correct or strengthen student findings so that students can compose a good and correct text.

Finally, the teacher carries out closing activities which are intended to end the learning process.

“setelah pembelajaran selesai, sama seperti pelajaran lain ibu membuat kesimpulan materi, lalu memperlisahkan siswa menanya jika ada yang belum paham, dan terakhir jika pembelajaran dirasa belum cukup maksimal guru-guru memberikan tugas tambahan untuk dikerjakan dirumah ya”

At the end of the lesson the teacher draws conclusions about the entire series of learning activities that have been carried out and the results obtained can provide benefits to students and teachers. The teacher also provides opportunities for students to ask questions if they feel that they do not understand enough and finally, if the learning is not considered optimal, the teacher gives additional assignments for students to do at home.

The teacher believes that there are positive things that result from the application of the Scientific Approach in learning that can be obtained by students.

“Hal yang positif dalam menerapkan Scientific Approach itu dimana kita bisa bersama-sama meningkatkan kemampuan intelek siswa dari segi pengetahuan, keterampilan dan sikap. Kemudian bisa membentuk kemampuan siswa dalam menyelesaikan masalah secara sistematis, kemudian itu ya yang positifnya”

The point is that the application of a scientific approach in learning can improve students' intellectual abilities in terms of knowledge, skills, attitudes, and shape students' abilities to solve problems systematically and train students in communicating ideas, especially in writing scientific articles.

Based on the results of interviews, learning with a scientific approach in learning English has been carried out well and meets the criteria. However, there are obstacles in its implementation. The obstacle here is at the association stage.

“yang negatifnya itu mungkin tidak semua siswa bisa mengikuti pembelajaran Scientific Approach secara maksimal, apalagi anak zaman sekarang susah banget disuruh baca buku tidak mau mencari sumber lain kalau belajar itu, makannya penerapan tahap asosiasi tidak semua siswa bisa maksimal melakukannya”

In this case, the teacher realizes that the difficulty in the association stage is because the students do not have critical thinking or are lazy to read looking for information from other sourcebooks which makes this association vision not run optimally.

Discussion

Education is said to be successfully seen from the curriculum and what methods teachers use to teach their students by looking at the results of the evaluation after carrying out learning. In order to create a society that can keep up with the times, the government through the Ministry of Education and Culture continues to innovate in the field of education, one of which is the development of the 2013 curriculum. The purpose of curriculum development is to produce students who have creative, innovative, and effective thinking through three aspects, namely knowledge, attitudes, and skills. In this curriculum, the learning process for all school levels is carried out using a scientific approach (Saminanto, 2013). Based on the research results, the teacher believes that this scientific approach has benefits for both teachers and students and teachers know that this approach is the approach recommended by the Ministry of Education and Culture in the 2013 curriculum. The scientific approach is learning that uses scientific principles where before carrying out learning the teacher makes a series of activities so that students can learn the material through the stages of observing, asking questions, formulating problems, collecting data with various techniques, analyzing data, drawing conclusions and communicating the concepts or principles found. Abidin (2014) also stated that there are five steps of learning activities that must be carried out in the learning process: 1) Observing scientifically, 2) Developing curiosity intelligence through questions, 3) Building critical thinking, 4) Experimenting, and 5) Communicating. In carrying out learning the teacher carries out preliminary activities, core activities and closing activities (Widyastono, 2014).

1. Introduction

In the introduction before starting learning, the teacher carries out activities such as greeting, checking the absence of students, so that the learning atmosphere feels more familiar and also conveying an outline of the material that will be studied by students to complete their assignments (Widyastono, 2014)

2. Core activity

Furthermore, the teacher carries out the main activities in the learning process by applying the five steps of a scientific approach. In learning, teachers are expected to apply this approach optimally in order to help build students' skills in mastering English. Learning using a scientific approach can be applied to four language skills, namely reading, writing, listening, and speaking (Zaim, 2017). The indicators in implementing learning using this approach are:

A. Observing

At this stage, the teacher contextualizes the learning activities for students in the classroom. In language learning, the material is observable facts, such as interpersonal texts,

certain texts, available texts, and linguistic elements from texts, videos, or recording (Kemendikbud, 2013). Observing student activities is obtained to obtain the real world through various senses of sight, smell, hearing, taste, and touch (Yani, 2014). In the results obtained at this stage, the teacher presents material or objects that can be observed by students as examples, for example, when they want to teach about descriptive text material, students are asked to observe an image in a book or if it supports this stage students are invited to leave the classroom to observe a phenomenon that exists around the school environment. For example, the teacher wants to teach material about descriptive text in describing cats. First, the teacher must prepare the object of observation, namely a cat, here the teacher can invite students to see the cat directly or can use media images or photos of cats to be shown to students. There students were asked to observe the cat in detail. Observing here means that students can see, listen, and find phenomena that exist in the surrounding environment, with this student will find problems to solve in learning. In addition, students receive information and can repeat and practice the activities given by the teacher. In this stage, it is hoped that after that students have competence in practicing seriousness, accuracy, and seeking information (Widyastono, 2014).

B. Questioning

Activities in the questioning step are asking questions about information that is not understood from what is observed or questions to get additional information about what is observed which is actual or hypothetical (Kemendikbud, 2013) . So, the teacher must encourage students to ask questions and formulate problems from what has been observed. Here the teacher asks students to make questions about cats to make it easier to find information about cats, for example, the question "what kind of animal is a cat?". If students have difficulty in formulating questions, the teacher can provide guidelines for making effective questions. The competencies developed are creativity, curiosity, ability to formulate questions to form critical thinking need to live smart and learn all the time life (Yani, 2014).

C. Experiment

The learning activities in experimenting are reading sources other than textbooks, interviews with students source person (Hosnan, 2014). Based on the results of the interviews, the teacher stated that at this stage working in groups is a good thing so that students can work together with members of their respective groups. At this stage students record the things they find from observations, they can provide information to each other, and provide input about the activities or characteristics of the cats they observe. Here the teacher must also ensure that all students are actively involved in their respective groups. Therefore, the teacher's role here is to provide learning resources, worksheets, media, or experimental tools as controllers who plan and manage data collection activities and processes (Brown, 2001) as quoted in (Nugraha, 2015).

D. Associating

At the associate stage, students process information from their observations and then they are encouraged to look for references from various sources other than what they have obtained. Association includes activities to create categories, define relationships between data or categories, and conclude from the results of the analysis (Yani, 2014). In addition, students and teachers are involved in learning activities, such as analyzing texts and categorizing. According to Perkemdikbud No. 81a (2013), the processing must go through: (1) processing the information that has been collected from the results of experiments and observations and (2) processing the information collected to find solutions from various sources with different opinions. This stage can help students develop honesty, thorough, disciplined attitudes, work

hard, apply procedures, and think inductively in concluding. Therefore, students are expected to be able to relate learning outcomes or experiment with the facts they find.

E. Communicating

The communication stage is where students report or convey the results of observations, experiments and conclude based on the results of the analysis orally or in writing or in other forms to tell others what students have learned, at each stage in the scientific approach always involves students playing an active role during the learning process (Abidin, 2014); (Hosnan, Pendekatan Saintifik dan Kontekstual dalam Pembelajaran Abad 21, 2014); and (Mulyasa, 2013). The teacher encourages students to arrange their observations into a descriptive text and then reads the results of their work in front of the class. The role of the teacher at this last stage is to correct or strengthen student findings so that students can compose good and correct texts and student learning outcomes are assessed by the teacher both individually and in groups (Widyastono, 2014).

3. Closing activity

In the end, the students and teachers make a summary of the material that has been carried out, evaluate the activities that have been carried out, carry out remedial, enrichment, counselling and give assignments at home both individually and in groups and lastly do not forget to review a little of the material that will be taught next, so that students can study first (Widyastono, 2014)

Teachers believe that there are positive things that result from the application of the Scientific Approach where learning can improve students' intellectual abilities in terms of knowledge, skills, attitudes in developing student character (Ngbalin, 2014), and shape students' ability to solve problems systematically through investigations to find facts (the facts of a phenomenon or event) (Sudrajat, 2013). However, it is unfortunate that behind the positive things that are obtained in the implementation process, teachers have difficulty, especially in the associating stage because students in Indonesia are not accustomed to reading books, so students are not accustomed to seeking additional information from other sources, especially books. Even some people consider this an emergency problem which is clear evidence that this shows one of the weaknesses in education in Indonesia (Driana, 2012).

CONCLUSION AND SUGGESTION

This study aims to analyze teachers' understanding of the scientific approach in teaching English because of the importance of the scientific approach to be applied in the context of teaching English. This research was conducted in a high school in West Java by involving an English teacher as a research participant. The results of the study confirm that teachers understand the general meaning, objectives, and stages in the scientific approach. However, at the associating stage because students in Indonesia are not used to reading books, so students are not accustomed to seeking additional information from other sources, especially books.

To overcome this problem, it is hoped that teachers can try to instil reading values in students. In addition, in each subject students must be accustomed to reading the material before starting the explanation of the material from the teacher. The school must also participate in efforts to overcome the low interest in reading students by always holding events related to reading. So that the application of the Scientific Approach can be used more effectively if all the supporting elements come from the teacher himself, the teacher's human resources, then the student's human resources as well, then the facilities and infrastructure must also support. It will be more effective and the application of Science Approach will also be more successful.

REFERENCES

- Abidin, Y. (2014). *Desain Sistem Pembelajaran*. Bandung: PT Refika Aditama.
- Abidin, Y.;Hosnan;& Kemendikbud. (2014, 2014, 2013). *Pendekatan Saintifik dan Kontekstual dalam Pembelajaran Abad 21, Kunci Sukses Implementasi Kurikulum 2013*. Bogor : Ghalia Indonesia.
- Asrizal, e. (2018). The Development Of Integrated Science Instructional Materials To Improve Students' Digital Literacy In Scientific Approach.
- Ayadiya, N.;& Sumarni, W. (2015). The application of discovery learning with scientific approach to improve the students' science process skill.
- Brown, H. D. (2001). *Teaching by Principles: An Interactive Approach to Language Pedagogy (2nd Edition ed.)*. New York: Addison Wesley Longman.
- Driana. (14. December 2012). *Gawat Darurat Pendidikan*. Noudettu osoitteesta Kompas.com [Newspaper]:
<https://nasional.kompas.com/read/2012/12/14/02344589/gawat.darurat.pendidikan>
- Haq, M.;& Murdiono, M. (2019). Problematika guru dalam penerapan pendekatan saintifik pada pembelajaran PPKn.
- Hosnan. (2014). *Pendekatan Saintifik dan Kontekstual dalam Pembelajaran Abad 21*. Bogor: Ghalia Indonesia.
- Hosnan. (2014). *Pendekatan Saintifik dan Kontekstual dalam Pembelajaran Abad 21*. Bogor: Ghalia Indonesia.
- In'am, A.;& Hajar, S. (2017). Learning Geometry through Discovery Learning Using a Scientific Approach. *International Journal of Instruction*, 55-70.
- Kasim , U. (2017). Classroom Practice: Applying the Scientific Approach Based on the 2013 Curriculum.
- Kemendikbud. (2013). *Modul Pelatihan Implementasi Kurikulum*. Jakarta: Depdikbud.
- Kemendikbud. (2013). *Modul Pelatihan Implementasi Kurikulum*. Jakarta: Depdikbud.
- Maleong, L. J. (2010). *Metodologi Penelitian Kualitatif*. Bandung: Remaja Rosdakarya.
- Margono. (2004). *Metodologi Penelitian Pendidikan*. Jakarta: Rineka Cipta.
- Masithoh, D. (2018). Teachers' scientific approach implementation in inculcating the students' scientific attitudes. *Jurnal Prima Edukasia*.
- Mulyana, D. (2008). *Ilmu Komunikasi: Suatu Pengantar*. Bandung: Remaja Rosdakarya.
- Mulyasa. (2013). *Implementasi Kurikulum Tingkat Satuan Pendidikan, Kemandirian Guru dan Kepala Sekolah*. Jakarta: Bumi Aksara.
- Mulyasa, E. (2014). *Pengembangan dan Implementasi Kurikulum 2013*. . Bandung: PT Remaja Rosdakarya.
- Muttaqin. (2015). A Descriptive Analysis of Teacher Talk in Leading the Teaching Learning Activities through the Stages of Scientific Approach: A Case Study in A Junior High School in Bandung. *Thesis*. *Sekolah Pasca Sarjana, Universitas Pendidikan Indonesia, Bandung*.

- Ngbalin, M. (2014). Persepsi dan Upaya Guru PAI dalam Implementasi Pendekatan Saintifik pada Kurikulum 2013 di SMA Negeri 52 Jakarta Utara.
- Nugraha, A. P. (2015). Analyzing Patterns of Classroom Interaction : A Case Study in an EFL Class of a Senior High School in Bandung. *Thesis Sekolah Pasca Sarjana, Universitas Pendidikan Indonesia, Bandung.*
- Nurchahyo, E.;& Djono, D. (2018). The implementation of discovery learning model with scientific learning approach to improve students' critical thinking in learning history. *International Journal of Multicultural and Multireligious Understanding*, 106-112.
- Perkemdikbud. (2013). *Permendikbud No 81A Implementasi Kurikulum* . Jakarta: Menteri Pendidikan dan Kebudayaan Republik Indonesia.
- Ratnaningsih, S. (2017). Scientific Approach Of 2013 Curriculum: Teachers' implementation In English Language Teaching.
- Rohita. (2018). Teacher's Understanding of the Scientific Approach in the 2013 . *Jurnal Obsesi : Jurnal Pendidikan Anak Usia Dini.*
- Saminanto. (2013). *Mengembangkan RPP PAIKEM Scientific Kurikulum 2013*. Semarang: Rasail.
- Sarwanti, S. (2016). Scientific Method in English Language Teaching.
- Sodik, F.;& Wijaya , M. (2017). mplementing scientific approach of 2013 curriculum at KTSP-based school for teaching present continuous tense. *English Education: Jurnal Tadris Bahasa Inggris.*
- Sudrajat, A. (2013). Pendekatan Saintifik dalam Proses Pembelajaran.
- Suherdi , I. (2017). Scientific Approach: An English Learning-Teaching. *Journal Of English And Education.*
- Widyaningrum;Sugiharto;& Sugiyo. (2017). Penerapan pembelajaran dengan pendekatan saintifik di TK Negeri Pembina Nalumsari Jepara. *Journal of Primary Education. Vol 6 No 1.*
- Widyastono, H. (2014). *Pengembangan Kurikulum di Era Otonomi Daerah (dari*. Jakarta: Bumi Aksara.
- Yani, A. (2014). *Mindset Kurikulum 2013*. Bandung: Alfabeta.
- Zaim, M. (2017). Implementing Scientific Approach to Teach English at Senior High School in Indonesia. *Asian Social Science.*