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The Implementation of Scientific Approach in Teaching English at SMAN 1 Batukliang Academic Year 2024/2025

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Abstract
This qualitative descriptive study investigates the implementation of the scientific approach in English language teaching at SMAN 1 Batukliang during the 2024/2025 academic year, with a particular focus on instructional practices and the challenges encountered by teachers. Data were collected through classroom observations, semi-structured interviews, and document analysis involving English teachers from Grades X, XI, and XII. Findings reveal that all participating teachers actively applied the five stages of the scientific approach—observing, questioning, experimenting, associating, and communicating—demonstrating notable creativity in adapting activities to suit their students' needs. However, consistent challenges emerged across all stages, primarily stemming from students' limited English proficiency, including insufficient vocabulary, weak grammatical competence, and difficulties in comprehension and oral expression. Additional obstacles included classroom management issues, unequal student participation in group work, and the need for extensive scaffolding and repetition. Despite these hurdles, teachers employed context-sensitive strategies—such as peer monitoring, targeted vocabulary reinforcement, and code-switching—to mitigate barriers and sustain engagement. The study underscores the critical role of teacher agency and pedagogical creativity in navigating the complexities of student-centered learning under Curriculum 2013. It also highlights the necessity of targeted professional development and contextualized support to enhance the effective implementation of the scientific approach in English classrooms.

Keywords
English teaching, scientific approach, teacher challenges, Curriculum 2013, student-centered learning

INTRODUCTION

English is known as the language which is crucially learned by the learners in the world especially in Indonesia. In Indonesia's education system, English is essential in our daily life because English is the language of instruction used as a communication tool (Humaidi et al., 2023). As Amrullah (2015:130) states, "English has a very important role in lives of Indonesians. Being fluent in English is a prerequisite for one's further educations, career interests, opportunities and economic potentials". The government of Indonesia makes the English becomes the obligate lesson which should be learned as it is required in almost all fields of occupation. English has been promulgated as a foreign language that must be taught in junior high school and senior high school in Indonesia. Therefore, the teachers are required to be able to teach English well in order to make the students understand English well.

Teacher is a professional educator with the main task of educating, guiding, directing, and evaluating students on the path of education. As an educator, teacher has a role to create lesson plan, to give valid information, to diagnose the attitude of the students, etc. Therefore, seeing from the roles, the teacher who has important roles in education is supposed to do the task well in order to achieve the learning objective.

Additionally, the quality of education is very important as it is the determiner of the success of the young generation in the future. In increasing the quality of education, there are many components which have to be prepared and one of which is curriculum (Prihantoro, 2015). Therefore, the Indonesian government has introduced the new curriculum which has put more emphasis on students' competences including covering, cognitive, and psycho-motoric competence (Maba et al., 2018).

This curriculum is called curriculum 2013 which was launched by Ministry of Education and Culture in the beginning of 2013. The government developed this curriculum in order to improve the students' competence, students' communication skill, students; critical thinking, and to consider the students' moral aspects (Permendikbud, 2013). Additionally, the approach used in the learning activity of curriculum 2013 is scientific approach in which the students are more active than the teacher in the learning process.

Basically, the aim of scientific approach is the students are able to gain new knowledge through science-based learning cycles. There are five steps of scientific approach implementation, those are; (a) observing, the students are given a question to observe a video, picture, or power point given while learning, (b) questioning, the students are given some activities to lead them to ask questions, (c) experimenting, the students are asked to do an experiment to get an authentic learning, (d) associating, describing students and teacher active participation in the classroom, and (e) communicating, the students draw the conclusion of the knowledge from the previous activities (Atmarizon & Zaim, 2016). This curriculum is expected to have contribution in generating productive, creative, innovative, and effective human resources (Mulyasa, 2013).

The use of scientific approach as organized in curriculum 2013 has been implemented in every school in Indonesia. The use of this approach aims to encourage students to be are critical and able to take initiative and participate in

class (Waluyo et al., 2020). The lesson plan which is arranged by the teacher has to include scientific approach in the activities given. However, until now, scientific approach still has not been used maximally because the teachers still have challenges in implementing scientific approach. The challenge which usually faced by the teacher is the unpreparedness of the teacher in implementing scientific approach in the classroom. In addition, the challenges also come from the students. According to Trisagita (2018), difficulties in implementation are mostly to the classroom management which student are the source of problems. It has been discovered that teachers struggle to get their students involved in class. Thus, the teacher has to consider a better way in teaching English in order to improve the students' motivation in learning English (Indiartho et al., 2021).

The challenges in implementing scientific approach also faced by the English teachers at SMAN 1 Batukliang. The implementation of scientific approach in teaching English at SMAN 1 Batukliang still cannot be considered as successful implementation, because the teachers still find it difficult to implement this kind of approach in teaching English. The difficulties exist because the teachers usually used teacher-centered learning, while scientific approach emphasizes the use of students-centered learning. Therefore, the teachers find it difficult to implement scientific approach.

RESEARCH METHOD

In this research, the researcher used a qualitative method. Qualitative method is defined as the research which is used to investigate the quality of relationships, situations, activities, and materials (Bogdan & Biklen, 1982). According to Creswell (2003), in qualitative research, the researcher analyzes the data using words or pictures rather than using statistic. Additionally, in qualitative research, the researcher is the key instrument in collecting the data.

This research is classified as descriptive qualitative in which the researcher described the data narratively. Therefore, the written words are extremely important as it described the situation and phenomenon happened. The researcher uses descriptive qualitative because this method helped the researcher to investigate a real phenomenon regarding the challenges faced by the teacher in implementing scientific approach in teaching English.

Furthermore, the researcher used observation, interview, and documentation as the techniques in collecting data. The first technique that used to collect data is observation technique. According to Baker (2006), observation is considered as the complex research method because it requires the researcher to use many techniques and to include her/his five senses in collecting data. The second technique which used to collect data is interview. Interview is doing conversation in order to achieve a set of purpose and task that related to gaining information regarding the research conducted (Libakova & Sertakova, 2014). The third technique that is used by the researcher in analyzing the data is documentation. The researcher took documentation while observing the learning activity in the class using scientific approach, and interviewing the English teachers. The researcher also took documentation of lesson plan used by the teachers.

Additionally, the researcher used observation checklist to observe how the teacher teaches English using scientific approach in classroom. The data which gained by using observation checklist answered the first question of the research. The researcher also created interview questions which contained some questions regarding the implementation of scientific approach and the challenges found by the English teachers while implementing it.

RESULT AND DISCUSSION

Research Findings

The implementation of scientific approach in teaching English at SMAN 1 Batukliang

The researcher was doing observation in order to know how the English teachers applied scientific approach in teaching English. This observation was conducted while the teacher was teaching English in the class. Here is the result of observation that was done by the researcher.

Table 1. Observation checklist of the application of scientific approach by the English Teacher at SMAN 1 Batukliang

No	Statement		Class		
			C1	C2	C3
1	Observing	The English teacher gives explanation to the students	√	√	√
		The students use give sense in learning process	√	√	√
		The English teacher gets challenges in observing step	√	√	√
2	Questioning	The English teacher explains the materials using textbook or media	√	√	√
		The students try to ask or answer questions from the teacher or the other students	√	√	√
		The English teacher finds challenges in questioning step	√	√	√
3	Experimenting	The English teacher gives instruction to the students to discuss the assignment given in group	√	√	√
		The teacher finds challenges in experimenting step	√	√	√
4	Associating	The English teacher directs the students to associate activity	√	√	√
		The teacher finds challenges in associating step	√	√	√
5	Communicating	The English teacher gives instruction to the students to explain or present the result of the assignment given	√	√	√
		The teacher finds challenges in communicating step	√	√	√

The researcher was doing observation while the students were learning about recount text in class 1 which is XI F5-B, the students in class 2 (X-B) were learning about analytical exposition text, and the students in class 3 (XII) were learning about hortatory exposition. The observation checklist above shows that the teachers in class 1, 2, and 3 have applied the components of scientific approach completely starting from observing, questioning, experimenting, associating, and communicating. However, they also found every component has its own challenges while being applied.

The teachers found the similar challenges in every component of scientific approach applied.

The challenges are faced by the English teachers in implementing scientific approach in teaching English at SMAN 1 Batukliang

The second technique used to analyze data is interview. The researcher interviewed three English teachers of SMAN 1 Batukliang. From the interview conducted, the researcher found that all teachers have applied all components of scientific approach. Besides, they also found that every component has its own challenge while being applied.

The result of interview conducted by the researcher at SMAN 1 Batukliang showed that the teachers faced challenges in every component of scientific approach. First, all English teachers from class 10, 11, and 12 have applied scientific approach in teaching English in the class. They applied all the components of scientific approach, and are applied step by step based on the sequence. Second, the English teachers at SMAN 1 Batukliang did different activities in observing stage. However, the activities done by the students are still in the context of observation stage. Third, the teachers also find challenges while implementing observing stage. However, the challenges found are different but all those challenges found are related to the students' skill. Then, questioning stage is also applied by teacher in different way. As seen from the activities done by the students, the teachers are creative in applying each stage of scientific approach. The challenges found in this stage by the teachers are related to the students' skill and understanding thus the teachers need more time to explain the students regarding the activities, materials, and even the words in questions given. Next, all teachers applied the experimenting stage appropriately. They asked the students to work in group while doing experimenting. Besides, the students conducted varied activities. Therefore, the teachers use their creativity in teaching the students. The challenges found in this stage by the teachers are different. However, the challenges found related to the students' English skill. Therefore, the teachers' creativity is required to improve the students' English skill especially in conducting experimenting stage. Additionally, in associating stage, the students are asked to analyze the information they found while doing experimenting. All teachers asked the students to do similar activity, but the teacher of class 11 is really creative that he asks the high skill students to share the information they find while doing experimenting to the other students. And the challenge found in this stage is the students' English skill and understanding is the biggest challenge and mostly found the teachers.

Furthermore, in communicating stage, the activity done by the students from class 10 to 12 is similar that they are asked to present their work after doing the whole activity. The teachers of class 10 and 12 asked the students to come to in front of with their group to explain their work, while the teacher of class 11 asked the students to do conversation to share the information they find. As seen, the teachers are very creative in giving the activity to the students. The challenge found in this stage is similar with the challenges found in previous stages that it is related to the students' English skill and understanding. Therefore, the teachers need to improve the students' English skill besides learning the materials.

Then, the teachers are asked about the most challenging stage from those five stages. The teachers pick different stage of scientific approach as the most challenging stage. However, as it can be seen it is always related to the students' English skill and understanding of conducting the activity. Besides, the teacher of class 12 has different reason from the other teachers that the challenge is experimenting as the students frequently do not work in team. Then, the solutions applied by the teachers are appropriate to the challenges found. The teachers do consider the solutions to solve the problem faced.

As seen from the result of interview above, the teachers applied every component of scientific approach with varied activities. It showed that the English teachers at SMAN 1 Batukliang are creative in handling the class. Besides, the teachers also found their own challenges in every component of scientific approach. In addition, the challenges found in every component were affected by the students' English capability or skill. However, the teachers explored the potential solution to address the challenges in hand. The teachers carefully considered the solution to face the challenges. Every teacher has their own solution for the challenges found.

Discussion

The implementation of scientific approach in teaching English at SMAN 1 Batukliang

The findings of the observation shows that the English teachers from class 10, 11, and 12 have applied all components of scientific approach starting from observing, questioning, experimenting, associating, and communicating. Besides, the English teachers also found challenges in applying those components of scientific approach.

First, all teachers from class 10, 11, and 12 applied observing stage correctly by giving explanation to the students, and they used five senses in learning process. In which the students were given the explanation first about the description of the materials and the learning activities. After that, the students were asked to focus on teachers' explanation by using their five senses. Second, in questioning stage, all teachers have given explanation to the students about the materials. They are also given some questions to answer, even ask some questions to the teacher or friends. Next, in experimenting stage, the teachers ask the students to work in group to discuss about the task given. They collected the information about the material being learned. Furthermore, the teachers asked the students to analyze the information regarding the materials in group. The last is in communicating stage, the students are asked to explain or present the findings or result after doing a sequence of learning activity of scientific approach.

However, in implementing these components of scientific approach in teaching English, the teachers found several challenges in every component. Different class has different challenges found by the teacher (Zaim, 2017). Besides, different component has its own challenges faced by the teacher while teaching English in the class.

The challenges are faced by the English teachers in implementing scientific approach in teaching English at SMAN 1 Batukliang

The findings of the interview conducted showed that the teachers found several challenges in implementing scientific approach. The challenges were found in every component of scientific approach.

First, there are several challenges found by the teachers in observing stage. The English teacher of class 10 found the challenge that the students have different skills thus the teacher had difficulties in deciding the materials learned. The teacher from class 11 said that the challenge was a lot of students have lack of vocabularies, couldn't pronounce the words very well, couldn't understand the materials very well, and have difficulties in speaking or communicating. Furthermore, the teacher of class 12 said that the challenge found was the students have lack of vocabularies thus they can't understand the questions or information given (Nation, 2013; Richards & Rodgers, 2014).

Second, the teachers also found the challenges in questioning stage. First, the teacher from class 10 faced the challenge regarding students' lack of understanding thus he needed to give more attention. Then, the teacher of class 11 said that the challenge found was she needed to explain the materials in detail and need a lot of time because the students have difficulties to understand the lesson learned. Furthermore, the challenge faced by the teacher in class 12 was the teacher needed to repeat the questions several times and translated it to Indonesian language, because the students frequently do not understand some words in the questions (Brown, 2007; Ur, 2012).

Third, the teachers also found the challenges in experimenting stage. The teacher in class 10 found that the students who have high skill more dominant and more active in doing the activity, thus the teacher have to control the students' role in doing activity in group. The teacher of class 11 said that the challenge found was the students' skill really impact the duration they find the information, and whether the information collected correct or not. Then, the teacher in class 12 stated that the students needed to be guided to work in team because they frequently did not help each other in doing the task (Harmer, 2015; Nunan, 2003).

Next, the challenges also found by the teachers in associating stage. The English teacher in class 10 said that the students frequently have difficulties in interpreting the information found because of their lack of vocabularies. Then, the teacher in class 11 said that the students did not participate actively because of their lack of understanding of the concept. It's affected by their low skill in understanding English. Furthermore, the challenge found by the teacher in class 12 was the students were difficult to understand the concept of the material because of their lack of vocabularies and do not understand the grammar structure (Ellis, 2016; Thornbury, 2002).

The teachers also found the challenges in the last stage of scientific approach; it is communicating stage. The challenge found by the teacher in grade 10 was the students who are able to speak in English are more dominant in explaining their materials, while the other students who have medium or low skill only join as the members of the group. Then, the English teacher in class 11 found the challenge that the students couldn't speak English fluently, couldn't' use grammar correctly, and got difficulties in writing. Thus, the teacher had to pay attention on everything which took a lot of time. The teacher in class 12 said that the challenge was the students have difficulties in speaking because of their lack of vocabularies (Richards, 2015; Hymes, 1972).

Furthermore, the teacher also picked the most challenging component of scientific approach. The English teacher in class 10 picked observation is the most challenging stage or component. The reason is because the students often do not understand what they are going to do. Besides, the students often do not listen to the teachers' explanation. The teacher stated that if the students do not know the first activity, they wouldn't understand what they are going to do in the next activity. Thus, the teacher has to make sure students' understanding of the first activity. The solution done by the teacher to face this challenge is control the students by asking the leader of the group to report the students who has lack of contribution, and give those students 10 new words regarding the material and ask them to memorize those words (Cameron, 2001; Richards & Lockhart, 1996).

Then, the most challenging stage for the English teacher in class 11 is communicating because the students' lack of vocabularies and incorrect structure of grammar thus the teacher has to teach those parts more than the actual material learned. The solution applied for this challenge is giving the students material to discuss, and asking them to speak English to each other (Lightbown & Spada, 2013; Brown, 2007).

Next is the most challenging stage for the teacher in class 12 is experimenting because students frequently do not help each other while they have to work in group. Thus, the teachers need to control them in order to make sure they help each other by doing their own role. Finally, the solution done by the teacher to this challenge is by controlling the students and making sure they do the activity in group.

The solutions applied by the teachers in facing the challenges while applying scientific approach are proven effective. The students' activeness can be seen as they participating actively in every activity of scientific approach. It is also impacted by the creativity of the teachers. It can be seen from the solution applied by the teachers. Mulyasa (2013) stated that successful implementation of curriculum depends on teachers' creativity, because it is considered as the main factor. Therefore, in facing these challenges, the teachers' creativity has crucial role as it determine the improvement of students' skill.

CONCLUSION

This study has demonstrated that English teachers at SMAN 1 Batukliang during the 2024/2025 academic year are actively implementing the scientific approach in their teaching, adhering to all five prescribed stages—observing, questioning, experimenting, associating, and communicating. The findings reveal that while the teachers exhibit creativity and commitment in adapting the approach to their classroom contexts, they consistently encounter significant challenges across all stages. These difficulties are predominantly rooted

in students' limited English proficiency, particularly in vocabulary, grammar, speaking fluency, and comprehension, which hinder active participation and meaningful engagement in student-centered activities. Additionally, classroom management issues, such as unequal group participation and lack of collaboration during collaborative tasks, further complicate implementation. Despite these obstacles, teachers have developed context-sensitive strategies—such as vocabulary reinforcement, peer monitoring, simplified instructions, and increased scaffolding—to mitigate challenges and sustain the scientific approach. These adaptive efforts underscore the critical role of teacher agency and pedagogical creativity in navigating the gap between curriculum policy and classroom reality in Indonesian senior high schools. Future research should employ mixed-methods designs to quantitatively measure the impact of the scientific approach on students' English language competencies while qualitatively exploring teacher preparedness, professional development needs, and the role of school-level support systems in facilitating effective implementation. Longitudinal studies could also examine how sustained use of the scientific approach, coupled with targeted language support, influences students' communicative confidence and academic achievement over time.

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