

Effective Strategies Employed by School Teachers to Promote Students' Critical Thinking Skills

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Abstract: Effective Strategies employed by School Teachers to Promote Students' Critical Thinking Skills. Developing students' critical thinking skill is highly important nowadays to provide students' skills in encountering various challenges in their life. **Objectives:** This study investigates the strategies employed by teachers during the teaching and learning processes to promote students' critical skills. **Methods:** This study used a qualitative research approach conducted in a senior high school consisting of 50 teachers and 5 teachers were selected as the participants of this research. The data were collected by conducting semi-structured interviews and the data were analyzed descriptively. **Findings:** This study found several strategies employed by the teachers in enhancing students' critical thinking skills. **Conclusions:** the Findings of this study provide implications to enrich the body of knowledge relevant to the theories concerning effective strategies to develop students' critical thinking skills.

Keywords: learning strategy, senior high school teachers, critical thinking skills.

Abstrak: Strategi-Strategi Efektif yang dilakukan oleh Guru untuk Meningkatkan Keterampilan Berpikir Kritis. Pengembangan keterampilan berpikir kritis siswa saat ini sangat penting untuk membekali siswa dalam menghadapi berbagai tantangan dalam hidupnya. **Tujuan:** Studi ini mengkaji strategi yang digunakan oleh guru selama proses belajar mengajar untuk meningkatkan keterampilan kritis siswa. **Metode:** Penelitian ini menggunakan pendekatan penelitian kualitatif yang dilakukan di sebuah sekolah menengah atas yang terdiri dari 50 guru dan 5 guru terpilih sebagai partisipan penelitian ini. Pengumpulan data dilakukan dengan wawancara semi terstruktur dan data dianalisis secara deskriptif. **Temuan:** Penelitian ini menemukan bahwa beberapa strategi digunakan oleh guru dalam meningkatkan keterampilan berpikir kritis siswa. **Kesimpulan:** Temuan penelitian ini memberikan implikasi untuk memperkaya khazanah pengetahuan yang relevan dengan teori-teori tentang strategi yang efektif untuk mengembangkan keterampilan berpikir kritis siswa.

Kata kunci: strategi pembelajaran, guru SMA, keterampilan berpikir kritis.

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■ INTRODUCTION

Critical thinking is a process that aims to make reasonable decisions about what to believe and what to do. Critical thinking is the ability to develop and explain arguments from data compiled into a complex decision or idea. In addition, critical thinking is a person's ability to analyze situations based on facts and evidence so that a conclusion is obtained (Hussin et al., 2018). In the learning process, students are trained to have critical thinking skills. Instilling the habit of critical thinking for students needs to be done so that they can observe various problems present in their lives at any time and have the ability to solve them properly. Therefore, the learning activity should be carried out effectively by the teachers to accommodate the improvement of the students' competencies and skills (Mantra et al., 2019)

In a broad sense, critical thinkers have the ability to analyze data or information in a systematic way based on logic in identifying and investigating data or facts. A critical thinker does not just accept a true statement because people think that the statement is true. Critical thinking is a mind that is focused on deciding what to believe to do. Critical thinking is the ability to think logically, reflectively, systematically and productively which is applied in making good judgments and decisions (Changwong et al., 2018). A critical thinking ability must be possessed by a student in carrying out learning, especially during a pandemic like now. Students must be able to use their minds to be able to learn independently in identifying the problems they face, finding solutions to these problems and being able to draw conclusions on what they understand and believe (Rahmawati et al., 2019; Widiastuti et al., 2020).

A person is said to be able to think critically if someone is able to think logically, reflectively, systematically and productive in making

judgments and making decisions. Therefore, critical thinking is a process of using rational and reflective thinking skills that aims to make decisions. Teachers are expected to develop students' critical thinking skills in teaching and learning activities in the classroom. Teachers may provide exercises to challenge students to think critically. In face-to-face learning, the learning activities can be easily monitored by the teachers. However, it is more difficult for the teachers to organize the classroom to ensure students the exercises when the class is conducted through online systems (Widiastuti et al., 2021).

There are several studies have been conducted to improve students' critical thinking in the learning process (e.g.: Fuad et al., 2017; Saputra et al., 2019; Mulyanto et al., 2018). Those previous studies were conducted by previous researchers to develop students' critical skills by integrating several teaching strategies such as mind map, differentiated science inquiry model, conventional model, jigsaw model and problem-based learning model. The strategies employed by the researchers were found to be effective in improving students' critical thinking. Therefore, considering the importance of critical thinking skills in nowadays life, it is important to conduct further study related to teachers' strategies to improve students' critical thinking skills.

Recently, Online learning that is carried out of course has an impact on the habits and abilities of students in carrying out learning and understanding the lessons they learn. Distance learning results in a lack of student motivation in playing an active role during learning (Rahayu & Wirza, 2020). This of course affects their ability to develop their critical thinking. In addition to decreasing students' motivation in developing their critical thinking, the learning carried out has an impact on the loss of meaning in the learning carried out. If this continues, it will greatly affect the results of learning outcomes that are not

optimal and the ability of students to develop their minds decrease (Yusuf et al., 2020).

The role and efforts of teachers in carrying out learning to be able to improve students' critical thinking skills are very necessary. Teachers not only provide subject matter but also must be able to become facilitators for students in developing their critical thinking skills. One of the efforts that can be done to improve the quality of human resources is to familiarize and form critical thinking skills in students in the learning process (Maba & Mantra, 2018). Developing critical thinking skills means giving awards to students for their mature lives. In addition, the purpose of learning critical thinking in students is to prepare them to become critical thinkers, able to solve problems, and face life in the current era of globalization without having a lot of obstacles, difficulties, and problems and be able to make decisions correctly and responsibly (Rustam E et al., 2017).

Several studies have been conducted concerning students' critical thinking improvement. A study conducted by Fitria et al. (2018) investigated the critical thinking skills indicators and aspects of prospective elementary school teachers, a study conducted by Gurcay & Ferah (2018) investigated the relationships between ninth-grade students' metacognitive self-regulation skills and physics self-efficacy beliefs and their critical thinking, another study conducted by Yusuf et al. (2020) studied the effect of critical thinking and learning outcomes through problem-based learning model. Those studies mostly investigated the nature and effect of the learning model on the students' critical thinking improvement.

Therefore, the present study focused on investigating teachers' strategies used by the teachers in developing students' critical skills. In this case, the teacher's role is very important in carrying out learning and linking the subject matter obtained in the context of everyday life, as well

as enabling students to use their critical thinking skills in facing increasingly tough and increasingly complex challenges in the future. Therefore, this study is considered to be valuable to be conducted to reveal the real existing effective strategies employed by school teachers in promoting students' critical thinking skills.

■ METHODS

This study used a qualitative research design with descriptive analysis. The study was conducted in a senior high school consisting of 50 teachers, and five teachers were selected as the subject of the study. Teachers were selected based on the length of their teaching experiences ranging from 5 years of teaching experience to 15 years of teaching experience. The total teachers were grouped based on the length of their teaching experiences and then randomly selected within their specified groups. The selected teachers were considered as representative of the total teachers in this study.

The data were collected by carrying out two interviews, and two classroom observations. Semi-structured interviews and classroom observations with the selected school teachers concerning the strategies being employed during the learning processes to develop students' critical thinking skills.

The research instruments were in the form of an interview guide and observation blank sheet. The interviews guide was listed with 6 main questions related to the strategies they employed to enhance students' critical thinking such as strategies in developing analyzing abilities, strategies in synthesizing, strategies in identifying problems, strategies in determining the information obtained, strategies in determining the information obtained, strategies in developing skills for drawing conclusions. Moreover, to ensure teachers provided appropriate answers, the interviews were set in a relaxed atmosphere.

The data were analyzed descriptively to establish valid and reliable findings. First, all data obtained from the interviews were carefully transcribed and put into the right category according to the classification of the data. Correspondingly, the data obtained from the observation were similarly put into the right category to match with the data of the interviews. Second, after all, data were put into the right category, then the data were triangulated to ensure the validity and the reliability of the data. Third, furthermore, data collected from the first and the second interviews were matched and then confirmed with data obtained from the classroom observations. Fourth, all data were discussed descriptively to establish reliable findings. Furthermore, the results were presented descriptively to provide a clearer understanding regarding the strategies used by the teachers in developing students' critical thinking skills.

■ RESULT AND DISCUSSIONS

The data in this study were mainly collected through interviews and observations conducted to gather the required data. The selected excerpts of the interviews with the teachers and the results of the observation related to strategies used by the teachers in improving students' critical thinking skills can be presented as the following.

Strategies in developing analyzing skills

Based on the results of observations to obtain data on strategies used by the teachers in developing students' skills in analyzing the given learning topics. At the first stage, the teachers conveyed the learning objectives that were carried out by providing information about the material to be taught. Furthermore, students were then to relate the material to be studied with the materials that have been studied. Afterward, teachers restated the learning objectives to be achieved at that meeting. At this stage, the teachers carried out learning activities, namely by

developing students' skills in understanding a general concept, knowing the material to be discussed, then asking students to describe the concept into small parts in detail. In this activity, the teachers directed students to describe the general concept by identifying, describing, connecting, detailing, and others. Students seemed enthusiastic in participating in the learning and they seemed to be able to describe the concepts of the topics discussed in a simple way.

Teachers in this study have improved students' critical thinking skills by giving the students to critically describe the concept of being explained by the teachers. Students were asked questions that required students to use higher thinking skills to answer and describe the concepts in detail. Students were asked to analyze the problems given and provide analytical answers. Learning activities conducted by the teachers by giving analytical questions may certainly improve their critical thinking skills (Silviariza & Handoyo, 2021).

The results of this observation are also supported by the results of interviews conducted with research subjects.

"Yes, as an initial stage, I always give a general concept of the topic to be discussed. It is intended that students about the origin of the concept so that learning can be structured properly. Then from these general concepts, I direct students to be able to break them down into smaller concepts so that they can lead to the learning topics that will be discussed.

Based on the findings of these data, it can be concluded that the teachers provided strategies to develop students' abilities in analyzing the basic concepts of the material to be studied. This is done so that students can understand the general description of the material to be discussed. The strategy to develop analytical skills is one of the strategies or concepts of critical thinking skills. This activity is carried out to stimulate students' ability to analyze in general the

concepts of the material to be studied in general by identifying them logically. This is in line with Anisimov et al. (2019) who clarified that critical thinking is an ability to analyze information from a position of logic and is a personal and psychological approach to apply the received results as to standard, as well as unusual situations, questions, problems; it is an ability to raise new questions, to develop various arguments, to make the independent thought-over decisions.

Strategies in synthesizing

Further classroom observations were then carried out to obtain information about the strategies carried out by the teachers to develop students' critical thinking skills. The observations made indicate the existence of a synthesis strategy. In this activity, the teachers asked students to recombine all the descriptions of the concepts previously expressed. Then from the combination of these descriptions, students were given the opportunity to relate and detail what is known in a controlled manner.

To improve students' skills in synthesizing, teachers asked the students to recombine the teachers' explanations about the concepts in a meaningful way. Students were practiced organizing all related information in the right order to become understandable concepts. Students were also asked to evaluate critically their recombined concepts to ensure that all the information have been written appropriately (Sutiani, 2021).

The results of the observations made were then matched with the results of interviews that were previously conducted with research subjects. The following are the results of the interview.

“Yes ma'am, I did this activity so that my students could convey what they identified logically using their own words”.

Based on the results of interviews and observations, it is known that the teachers carried out learning activities with the aim of developing students' skills in synthesizing the material being taught. This is a part of the concept and strategy of critical thinking. Synthesizing is an important part of critical thinking. Furthermore, Petrov & Volkova, (2016) emphasized that active learning is to provide opportunities for learners to critically think about content through a range of activities that help prepare learners for the challenges of professional situations.

Strategies in identifying problems

At this stage is the implementation of the inquiring stage to improve students' abilities in determining the problems to be discussed. In this case, the teachers helped students in developing students ability to identify problems. The teacher conveyed several statements and then asked students to identify the problems that exist in the statement. The teachers showed some pictures and asked the students to find problems from the pictures they see. Problem finding presented by students shows their ability to understand information through observing and reading. The teachers in this activity tried to build students' skills in comparing every problem found by re-emphasizing and returning the problems to the concept repeatedly so that the right concept is embedded without blaming and limiting students' creativity in thinking. The process of identifying problems is one of the strategies used in problem-solving (Palupi & Subiyantoro, 2020).

“Yes, I provide students some statements and also pictures and then ask them to identify the problems from the statements and the pictures. Most of my students are always active in identifying the problems”

After identifying the problem, the teachers asked students to analyze it by comparing the information found by each student. The process

of comparing was intended to see any differences in each finding from the problem during learning. The actualization of critical thinking processes is reflected in the students' asking questions. The teacher stimulated students to ask questions by giving students the opportunity to ask questions based on the problems found. This stage showed students' skills in finding the problems discussed.

Activities carried out by teachers demonstrated the ability of teachers to develop students' critical thinking skills. Proving some activities to encourage students to identify problems, certainly helps students to build their ability to develop their critical thinking skills. In general, critical thinking is characterized by the ability to reason appropriately, systematically and logically in understanding concepts or beliefs, to take action and solve problems based on the mechanisms of conceptual analysis and argumentation. Fazriyah et al. (2018) described that identifying problem is an important stage to make the students able to provide solutions to the problems.

Strategies in determining the information obtained

Based on the observations, students were given the opportunity to express the information obtained in the pictures or statements submitted by the teachers. Students were asked to pay attention, analyze, and convey the information obtained. Then the teachers gave assignments to students to conduct small group discussions. They were also asked to look for solutions from available online sources. This is done to analyze the truth, accuracy and relevance of the information to the facts studied. Furthermore, all information obtained by students was conveyed to the teachers.

To practice students in obtaining information, teachers provide students opportunities to describe what they can get from

the pictures or explanations given by the teachers. Students also practiced analyzing the information they obtained and they were asked to share the information with other students by discussing it in their small groups. This activity which was done by the teachers certainly an indicator that teachers have practice students determining the information obtained (Basri & As' Ari, 2019). This is also supported by the results of interviews conducted with teachers.

"You see... in this activity I usually ask students to pay attention to the statements that I convey, then I ask them to look for information related to what I convey through the internet, then they convey what they see with information obtained from the internet".

According to the teachers, this activity was carried out in an effort to determine the information obtained by students. Then the teachers asked students to show the part of the information found to determine the availability of information and the suitability of the information obtained from the internet with pictures and statements submitted by the teachers. Furthermore, the teachers gave students the opportunity to convey the information they found and asked them to observe and analyze any information submitted. At this stage, teachers provided opportunities for students to present the results of their discussions in front of the class and asked questions about students' presentations.

The teachers also asked students to assess the similarities and differences in the information conveyed by their friends. The next step was that the teacher provided opportunities for students to explain what they understood to their peers in the form of presentations in front of the class. In this stage, the teachers provided opportunities for students to ask questions about the presentation presented by their classmates. Teachers provide additional emphasis and explanations to complete

students' explanations. Mutakinati et al. (2018) further confirmed that the presentation is essential to practice students to present their understanding to other students as well to build their communication skills.

Strategies in developing conclusion drawing skills

Observations were made to obtain information about the teachers' strategy in developing students' ability to draw conclusions. At this stage, the teachers asked students to summarize the material presented. The teachers stimulated students to be able to convey the information they know, then asked students to convey the conclusions obtained from the discussions carried out during the learning process. In this stage, the teachers gave students the opportunity to explore their abilities in assembling their opinions and information into a conclusion from the material being studied using their own words. The ability of the students in putting together the information they get from the teachers' explanation and summarize the information into a brief and concise conclusion becomes an indicator that they have the competency in drawing conclusions (Agustin et al., 2020).

"yeah... I always ask my students to conclude my explanation. This is important to practice their skills in putting the information together into a more concise summary. I often ask my students to make conclusions several times during the learning process to ensure that they have a lot of practice"

In drawing conclusions, students were asked to provide a summary of the material studied. This activity allows students to express their opinions regarding the material by using an analysis carried out in their own words. Furthermore, having the ability to draw based on the analysis of the solutions to the problems is the most important thing in developing students' critical thinking skills (Handayani et al., 2019). Therefore, the student's skills in drawing an appropriate conclusion are very important in developing students' critical thinking skills.

Additionally, based on the observations, it was found that the learning materials were delivered according to the standard portion of basic competencies and student learning characteristics, namely learning contextually. The variety of teaching material sources used in the form of modules, videos, articles and the internet can support the achievement of the specified critical thinking indicators. Students were trained to collect facts and consider information received from various sources so that their critical thinking skills increase. Using various sources in learning certainly helps students to develop their horizons to a variety of knowledge related to the learning materials that they have to master. In this study, teachers also utilize various sources taken and adapted from online sources. This enables teachers to link up the learning material with the trends and most current learning materials.

The following is a table of the steps of the critical thinking process carried out by students in learning as found during the classroom observations.

Table 1. The steps of the critical thinking process

Step	Activity
Step 1	Developing the ability to analyze the material to be studied
Step 2	Synthesizing the material by relating and detailing what is known in a controlled manner.

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- Step 3 Identifying the problem, relevant information and any conjectures about the problem. This includes being aware of the possibility of more than one solution.
- Step 4 Exploring interpretations and identifying existing relationships. This includes recognizing existing biases/prejudice, linking the reasons associated with alternative views and organizing the available information so as to produce meaningful data.
- Step 5 Determining the information obtained by giving students the opportunity to convey the information they find and asking them to observe and analyze any information presented.
- Step 6 Drawing conclusions. Determining the priority of existing alternatives and communicating conclusions. This includes the process of careful analysis in developing the guidelines used to determine factors, and defend the chosen solution.
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In summary of the data, it can be described that critical thinking is a reflective thinking ability that focuses on decision-making patterns about what to believe and what to do. Moreover, critical thinking is understanding the meaning of the problem more deeply, keeping the mind open to all different views, thinking reflectively, and not just accepting statements and carrying out procedures without understanding them first. Critical thinking is a method of independent thinking that exemplifies the perfection of thinking in accordance with certain modes of thinking. From the study of several definitions of critical thinking, it can be synthesized that critical thinking skills are a person's skills in a process of obtaining, evaluating, and using knowledge effectively which involves mental activities such as solving problems, making reasonable decisions, analyzing assumptions and making conclusions based on facts that are believed to be true so that they can help students understand the concept of in-depth learning.

Critical thinking, that is, a person must first have an alternative as a temporary answer, then determine the criteria for having the most correct

answer. determination of criteria is based on knowledge and concepts related to the problems at hand. Indicators of critical thinking people as follows: (1) using facts correctly and honestly, (2) organizing thoughts and expressing them clearly, logically and sensibly, (3) distinguishing between conclusions based on valid logic and invalid logic, (4) identifying data adequacy, (5) denying an irrelevant argument and presenting a relevant argument, (6) questioning a view and questioning the implications of a view, (7) realizing that one's facts and understanding are always limited, (8) recognizing the possibility of error from an opinion and the possibility of bias in the opinion.

Such learning activities result in a better understanding and deep memory of related concepts and materials, finding problems is a way of identifying problems by compiling assignments so that students use skills that are similar to the skills needed in uncertain problems that students may face in their lives, enhancing the environment (conditioning the environment). Critical thinking in the classroom is facilitated by a physical and intelligent environment that supports a spirit of discovery. According to the physical appearance

of the classroom if seating is arranged so that students can share the stage with the teacher and all can see and interact with one another. This helps to minimize the receptive passive mode of most adopted students when all students are facing the teacher.

■ CONCLUSIONS

Based on the findings of the research conducted, there are six descriptions of strategies for developing students' critical thinking skills carried out by teachers when carrying out classroom learning including; strategies to develop analytical skills, strategies to synthesize, strategies to identify problems, strategies to determine the information obtained, and strategies to develop skills to draw conclusions. Critical thinking in the context of learning English involves language activities that encourage students to interpret, collaborate in English language practice, use conventions in writing skills, apply cultural knowledge, solve problems on the topics discussed, reflect on their use of language and create discourse. Thinking appropriately in the process of achieving relevant and valid knowledge, thinking reasonable, reflective, responsible and focused in deciding what to believe or do, able to raise appropriate questions, collect relevant information, sort information efficiently and creatively, reasoning logically and making reliable and scientifically justifiable results to later be useful for success in life are some examples of critical thinking skills.

This study implies that teachers should always try their best to improve students' critical thinking in learning processes. The learning activities conducted in the classroom should provide sufficient opportunities for the students to enrich their critical thinking skills. Nurturing the critical thinking skills of the students may help students improve their learning competencies and also make them ready to face various challenges

the encountering their life, especially now in the millennial era where the development of technology and the complexity of life, having a good critical skill is really needed. Therefore, teachers should continually develop their strategies to develop students' critical thinking skills.

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