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INFLUENCE OF QUESTIONING TECHNIQUES IN EFL CLASSES ON DEVELOPING STUDENTS' CRITICAL THINKING SKILLS

Research Article

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TEACHER'S QUESTIONING IN SENIOR HIGH ENGLISH CLASSROOM: AN INVESTIGATION OF STUDENTS' CRITICAL THINKING SKILLS

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Abstract

Rapid changes in global education directly affect each education aspects including skills that should be mastered by students and teaching strategy used. Moreover, developments of education in the 21st century put stronger importance on Higher-Order Thinking Skills (HOTS) in which critical thinking skills include. In this case, the teacher's questioning as a strategy promoting HOTS to cultivate critical thinking skills will be the concern of this research. The research aimed to examine the level of questions used by the teacher and its contributions to students' critical thinking. The research was carried out using case study design in Senior High School in East Java. In obtaining the data, classroom observation, field notes, and interviews were employed. The results showed that the teacher used both low order questions and high order questions. Additionally, it was also found that lower-order thinking questions could not facilitate students to think critically, however, it only leads the students to understand the concept given. Hence, it was suggested to maximize the use of higher-order levels questions to train the students to think critically.

Keywords: Teacher's Questioning, Students' Critical Thinking, Higher Order Thinking Skills (HOTS)

1. Introduction

In recent years, critical thinking has become one of the most ubiquitous terms frequently discussed in educational circles because of its great influence on life. Cottrell (2005) mentions critical thinking skills helps students in improving attention and observation, identifying the key points in a text or message, improving their ability to respond to the appropriate points in a message, increasing knowledge of how to get one 's point across more easily and improving skills of analysis. In other words, people with refined critical thinking skills will easily understand the situation around them and surely in making decisions. Moreover, critical thinking is an inseparable aspect of 21st-century learning in which Higher Order Thinking Skills (HOTS) required. In line with Kemendikbud (2018) which mentions critical thinking is one of the three essential aspects need in mastering HOTS besides problem-solving and transfer of knowledge.

Ennis (1989) defines critical thinking is reasonable, reflective thinking that is focused on deciding what to believe or do. Critical thinking is reasonable thinking because it demands us to have good reasons for our decisions. Critical thinking is reflective because it involves thinking about a certain problem from several different angles all at once, including thinking

about what the right method is for solving the problem. Critical thinking also aims at deciding what to believe and what to do. In other word, critical thinking links theoretical reasoning (reasoning about what the facts are) with practical reasoning (reasoning about what to do or how to do). Additionally, Fisher (2011) also defines critical thinking is a skilled and active interpretation and evaluation of observations and communications, information and argumentation. In sum, critical thinking is an active process that requires someone to have skill in reasoning, decision making, reflective thinking, and problem-solving.

Knowing that critical thinking is valuable, embedding critical thinking skills in the curriculum through HOTS based learning is undeniable important since it helps sustain an educated citizenry, prepares students to be a success in both career and life, and prepares students to meet mandates of state and national tests and standards (Stobaugh, 2013). Therefore, questioning as strategy promoting Higher Order Thinking Skills (HOTS) (Conklin, 2011; King et. al, 2013) and cultivating critical thinking (Brooks, 2012; Ur, 1996) will become the focus of this research. Ur (1996) defines questioning is a teacher utterance which is commonly used as an activation technique in teaching, mainly within the Initiation - Response - Feedback pattern. Teacher questions are not always realized by interrogatives but can appear in the form of statements or commands. Additionally, questioning can be used to gain the students' oral response which ranges from simple recall of information to abstract processes of applying, synthesizing, and evaluating information (Zepeda, 2009; Stobaugh, 2013).

Based on the explanation above, it can be assumed that students' thinking level is strongly affected by the questions level teacher posed in class. Therefore, Bloom's Taxonomy will be used as a tool to assess the level of thinking and build an understanding of each level. Bloom's taxonomy (1956) classifies the cognitive level into six major headings arranged from simple to complex. It comprises six categories: knowledge, comprehension, application, analysis, synthesis, and evaluation. However, in this research, Bloom's Revised Taxonomy will be used. The Anderson and Krathwohl revision (2001) retains six cognitive process categories: remembering, understanding, applying, analyzing, evaluating and creating. The figure below shows the difference between the original version and the revised one.

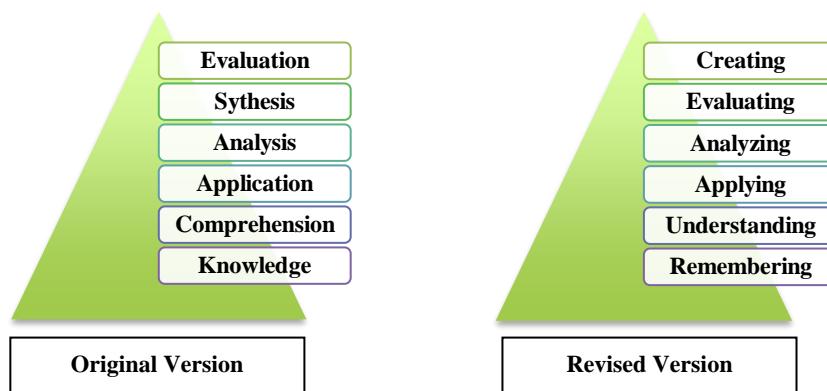


Figure 1. Original Bloom's vs. Revised Bloom's Taxonomy (Conklin, 2011: 51)

Conklin (2011) and Kemendikbud (2018) mention the last top three levels of Bloom's Taxonomy of the Cognitive Domain consider as Higher Order Thinking. Additionally, the last top three levels (analyzing, evaluating, and creating) are often representative critical thinking (Kennedy et al., 1991). In line with the statement mention, Nordvall and Braxton

(1996) also state the top three levels of the taxonomy represent Higher Order Thinking and critical thinking. Further, Brooks et.al (2012) used Bloom's Taxonomy to categorize the level of questions. Level of questions can be classified into two parts that are low order questions and high order questions; each of them can be broken down into several types of questions. High-order questions make greater cognitive demands and require pupils to analyze, synthesize and make evaluations while low-order questions consist of recall questions, comprehension question and application questions which do not require greater cognitive.

The following are some previous studies that discuss teacher's questioning. Rohmah (2003) conducted research using a mixed-method to investigate English teacher's questions in reading classes including types of questions, functions of teacher's questions, question levels and the strategies applied. The data show that the distribution of types of questions prevents the students from talking extensively. It was also found that closed questions dominate the teacher's questions. The closed questions comprise 80% of all questions. Besides, most of the teacher's questions functioned as a way of checking pupils' specific recall of facts. As a result, the students' participation was very little. Another research was done by Khan (2011) also showed that most of the questions categorized as low- level cognitive questions. The total percentage of questions during 445 minutes was 60 percent with 267 questions were asked. Among 267 questions 67 percent were knowledge-based, 23 percent were comprehension based, 7 percent were application-based, percent were analysis based and 1 percent was synthesis based. However, the ratio of evaluation based questions was zero.

Moreover, Ashadi and Lubis (2017) did research entitled A Survey on the Levels of Questioning of ELT: A Case Study in an Indonesian Tertiary Education to examine the levels of questions used by English Education lecturers in their summative assessment in Indonesia tertiary education. It was found that the lower order thinking level still dominated the question types (69%). There were only 31% higher-order questions used on the summative test. Further, Kurniawati and Fitriati (2017) conducted a discourse study which aimed to investigate the teachers' questioning skill in asking the cognitive level of questions during the teaching-learning activity. The teachers also used all of the questioning techniques which are redirection, probing, prompting, wait-time and rephrasing. Additionally, the research showed that the level of question dominating the teaching and learning process is the low-level question which is the understanding level.

Many previous studies (Rohmah, 2003; Khan, 2011; Ashadi and Lubis, 2017; Kurniawati and Fitriati, 2017) have focused more on the types of questions, the functions of the teacher's questions, the levels of the questions teachers posed in the classroom and the strategies applied. However, few research studies have examined the contributions of teacher's questioning on students' critical thinking in the Indonesian context. Recently, cultivating students' higher-order thinking especially critical thinking has become a hot issue in the field of language education. Therefore, this research aimed to examine the level of questions used by the teacher and investigate the role of the teacher's questioning on students' critical thinking.

This research is expected to be beneficial to contribute to the English teachers and other researchers. It is expected that this research will be beneficial as additional references or consideration in conducting further research about Higher Order Thinking Skills (HOTS). Further, it is hoped that the research will give such insight into the essence of teacher's questions and its effect on the teaching and learning process.

2. Methodology

Since the focus of this research is to examine the level of questions used by the teacher and its contributions to students' critical thinking, qualitative research is the appropriate approach to be used to reveal in-depth and detailed information about the event. This qualitative research was conducted by employing a case study as the design. Yin (2018) states a case study is a qualitative approach that investigates a contemporary phenomenon within its real-life context and the boundaries between phenomenon and context that are not clearly seen.

This research was carried out in a Senior High School in East Java. The participants engaged in this research were an English teacher who taught tenth-grade students and 36 tenth grade students. The students consist of 9 male students and 27 female students. Observation, field notes, and interviews were done in obtaining the data. In doing the observation, the researcher acts as a nonparticipant observer. The observation focuses not only on the classroom interaction, but also the learning activities and its contribution to students' critical thinking. During classroom observation, the researcher takes note of what is going on in the class and operates a video recorder to capture the teaching and learning process.

In this research, the interview was conducted to get in-depth information that cannot be attained by observations and to gain further information about the implementation of questioning in the classroom during teaching reading skills. The interview will be addressed both to the students and the teacher involved in this research. The interview was designed to obtain the data related to the contributions of teacher's questions on students' critical thinking. In the process of interview, the researcher uses a recorder to record the entire information provided by English teachers and the students to help the researcher for the ease of data transcription and to provide an accurate record of the conversation. Six students were interviewed in this research to obtain data related to the role of teacher's questions.

In analyzing the data, the researcher used pattern matching as the data analysis technique from Yin (2018). The process of pattern matching is divided into three phases which comprise (1) stating the study's proposition, (2) testing the empirically-found pattern from each distinct method against the predicted one, and (3) providing theoretical explanations and developing research outcome. The researcher develops a hypothesis based on the theory. Cognitive development theory (Bloom, 1956; Anderson Krathwohl, 2001; Conklin, 2011; Stobaugh, 2013) was used in this research. It is assumed that high order questions promote students' critical thinking. Then, the researcher matches the predicted pattern with the founded pattern. After that, the researcher gives a brief explanation related to the research results and findings.

3. Findings and Discussion

In examining the level of questions used by the teacher and its contributions to students' critical thinking, several data got from observation, field notes and interviews were collected. Based on the data that have been obtained, several findings were revealed to answer the problem statements. Below are the findings of the current research that later be justified to other relevant theories.

3.1 Cognitive Level of Questions Teacher Asked in Class

In cultivating critical thinking in class, the teacher used varied cognitive level in giving questions to find out the level of students understanding. The cognitive levels of questions found during the learning process were categorized based on Bloom's Revised Taxonomy. The number of questions the researcher obtained was 70 questions during four

meetings. It was found that low order questions and high order questions were used during the teaching and learning process. The frequency and the sample of the teacher's questions were explained below.

Table 1. *Samples of Questions Asked by the Teacher*

Cognitive Level of Questions	Examples
Remembering	What is congratulating?
Understanding	Can you classify which expressions show congratulation and which expression show complementing?
Applying	When someone congratulates you for example you are having a new phone. What would someone say to you?
Analyzing	Can you differentiate between which one is complementing and which one is congratulating?
Evaluating	I must congratulate you on your success. Do you think that this is also the expressions of congratulation?
Creating	Can you make congratulating card in this paper?

Table 2. *Frequency of Each Cognitive Level of Questions*

Cognitive Level of Questions	Total of Questions	Percentage
Remembering	19	27%
Understanding	17	24%
Applying	8	11%
Analyzing	8	11%
Evaluating	16	23%
Creating	2	3%
Total	70	100%

Based on the data mention, it can be concluded that all types of questions covering remembering, understanding, applying, analyzing, evaluating and creating were used during the teaching and learning process. It also can be seen that there were three dominant cognitive levels of questions asked by the teacher, namely remembering, understanding and evaluating. The results indicated that the teachers asked evaluating questions often among the other high order questions level. It is in line with the result of the interview. The teachers said that evaluating questions were frequently asked.

Questions that I often used are C4 (analyzing) and C5 (evaluating). However, low order thinking questions comprise C1 (remembering), C2 (understanding) and C3 (applying) are still used in the learning process. While C6 (creating) is used in assigning tasks in the form of directions. However, the proportion of each question is based on the situation in class.

In terms of the frequency of each cognitive level of questions, as stated in Table 2, the number of low order questions was much higher than high order questions. Low order questions still dominated comparing to the high order questions. The following is the comparison between low order questions and high order questions.

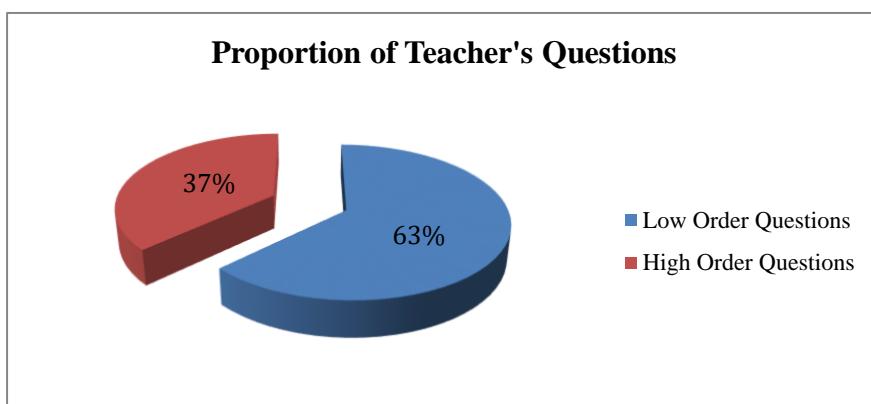


Figure 2. The Proportion of Teacher's Questions

There were only 37% high order questions used in the class compared to 67% low order questions. It happened due to the difficulty occurred during the teaching and learning process. Students had difficulty conveying ideas due to a lack of vocabulary which made the teacher posing questions that lead them answering questions. It is proved by the observation and interview that limited vocabulary and grammatical knowledge influenced the students' inability to put their ideas into words. Therefore, students rarely respond to teacher questions.

Students 1: Sometimes, I have difficulty in answering questions given due to the limitation of vocabulary. It makes me difficult in expressing ideas into sentences.

Students 2: Unfamiliar vocabulary used in the class makes me difficult in grasping the intention of the questions.

In solving this phenomenon, the teacher leads the students by giving hint through questions. Sometimes, the teacher repeats the questions given or changes the vocabulary used. In this case, the teacher wants the students to master the material given besides inserting critical thinking skills.

3.2 Contribution of Teacher's Questions on Students' Critical Thinking

Based on the observation done during the learning process in the tenth-grade students, the teacher used plenty of low order questions (63%) a whole. It means that the teacher's questions could not improve students' critical thinking due to the number of questions asked, yet it only could facilitate students to think critically. In line with the theory of cognitive domain (Bloom, 1956; Anderson and Krathwohl, 2001; Conklin, 2011), lower cognitive

questions only require students to simply recall the prescribed data from memory, concentrating on factual information. In this research, low order questions asked related to vocabulary and context of the text.

However, the variety of questions the teacher asked in the class cultivates the students' critical thinking skills. In analyzing the contribution of teacher's questions on students' critical thinking, the researcher analyzed low order questions and high order questions. It is known from the questions posed in the class, there are several high order questions asked. Further, the teacher's questions facilitate students to think critically. As stated by Shen and Yodkhumlu (2012), Higher Cognitive Questions can promote students' higher-order thinking, that is, Critical Thinking. Higher Cognitive Questions require students having independent thinking such as problem-solving, analyzing and evaluating information. Moreover, the interview also showed that teacher's questions help students to think critically.

Students 1: Teacher's questions help me to understand the material and to think critically. The questions asked triggering us to think and comprehend the material. Moreover, the level of the questions which is arranged based on the difficulty level facilitates us in learning the material.

Students 2: The existence of the teacher's questions requires us to think in-depth. Moreover, the questions make me feel curious about the material then directly learn it seriously. So, the teacher's questions help me in understanding the material and think critically.

From the reason aforementioned, it is known that the teacher's questions facilitate students' critical thinking. Yet, due to the number of high order questions which is less than low order questions, teacher's questions could not give a significant effect on the development of critical thinking in class. Nevertheless, it does not mean that low order questions are purposeless in the teaching and learning process. They are still important to be asked because it can lead the students to reach a higher level of cognitive thinking. Additionally, teacher's questions either low or high order questions still become the common strategy for eliciting responses from students during the whole class teaching.

4. Conclusion

Teachers are an important component in the educational system; therefore, quality teachers are important for the competitive and global world, without exception in this 21st century learning (Mirici & Yangin, 2016). Teachers are required to have several competencies in the teaching-learning process, including understanding the materials, having the ability to use technology, and having broad knowledge about creative strategy in teaching (Astuti, Fauziati & Marmanto, 2019). In this case, teacher's questioning is regarded as one of the essential techniques in the EFL classroom. The act of thinking is often driven by questions (Elder & Paul, 1998). Therefore, through the art of questioning, EFL teachers can help students to build understanding and think critically and creatively. Moreover, questioning helps EFL teachers achieving teaching objectives more effectively and knowing students' potentials. In the present case study, it was assumed that the teacher would ask enough high order questions to promote students' critical thinking. Nevertheless, the findings of the study were in contrast with this assumption. The results showed that low order questions, related to recalling facts or understanding factual information, were often used than high order questions, which require students to have independent thinking and reasoning. The results of the research were in line with the research conducted by Ho (2005)

and Kurniawati and Fitriati (2017). Additionally, the number of high order questions limits the development of students' critical thinking. Hence, it was suggested to maximize the use of high order levels questions to train the students to think critically. It is believed that enacting high order questions could strengthen students' critical thinking. Besides, it is important to prepare the student's language skills to facilitate them in the teaching and learning process.

Although the research has reached its aims, there are some unavoidable limitations. First, due to the time limit, the observation was only done four times. Second, the number of participants was only an English teacher with her 36 students from the tenth-grade senior high schools in East Java. Further, it is suggested for other researchers to broaden the research area. Other researchers are also recommended to investigate the role of teachers' questioning on students' critical thinking, especially in another education field.

References

- Anderson, L. W., & Krathwohl, D. R. (eds. with P. W Airasian, K. A. Cruikshank, R. E. Mayer, P. R. Pintrich, J. Raths, & M. C. Wittrock). (2001). *A taxonomy for learning, teaching, and assessing: A revision of Bloom's taxonomy of educational objectives*. New York: Longman
- Astuti, D. A., Fauziati, E., & Marmanto, S. (2019). Celebrating students' diversities through understanding students' characteristics. *International Online Journal of Education and Teaching (IOJET)*, 6(4). 723-731 <http://iojet.org/index.php/IOJET/article/view/653> Received: 30.05.2019
- Bloom, B. S. (ed.). (1956). *Taxonomy of educational objectives. Handbook 1: Cognitive domain*. New York: David McKay.
- Brooks, V., Abbott, I., & Huddleston, P. (Eds.). (2012). *Preparing to teach in secondary schools: a student teacher's guide to professional issues in secondary education*. McGraw-Hill Education (UK).
- Conklin, W. (2011). *Higher-order thinking skills to develop 21st century learners*. Teacher Created Materials.
- Cottrel, S. (2005). *Critical thinking skills: Developing effective analysis and argument*. New York: Palgrave Macmillan
- Elder, L., & Paul, R. (1998). The role of Socratic questioning in thinking, teaching, and learning. *The Clearing House*, 71(5), 297-301.
- Fisher, A. (2011). *Critical thinking: An introduction*. New York: Cambridge University Press.
- Ho, D. G. E. (2005). Why Do Teachers Ask the Questions They Ask? *RELC*, 36(3), 297-310.
- Kementerian Pendidikan dan Kebudayaan. (2018). *Buku Pegangan Pembelajaran Berorientasi pada Keterampilan Berpikir Tingkat Tinggi*. Jakarta: Kementerian Pendidikan dan Kebudayaan Republik Indonesia.
- Kennedy, M., Fisher, M. B., & Ennis, R.H. (1991). Critical thinking: Literature review and needed research. In L. Idol & B.F. Jones (Eds.), *Educational values and cognitive instruction: Implications for reform* (pp. 11-40). Hillsdale, New Jersey: Lawrence Erlbaum & Associates.
- King, F. J., Goodson, L., & Rohani, F. (2013). *Higher Order Thinking Skills*. Retrieved from <http://www.cala.fsu.edu>
- Mirici, İ. H. & Yangın Ekşi, G. (2016). A descriptive study on the profile of some potential English language teachers. *International Online Journal of Education and Teaching (IOJET)*, 3(1). 65-81. <http://iojet.org/index.php/IOJET/article/view/121/123>
- Nordvall, R. C., & Braxton, J. M. (1996). An alternative definition of quality of undergraduate college education: Toward usable knowledge of improvement. *The Journal of Higher Education*, 67(5), 483–497. <http://dx.doi.org/10.2307/2943865>
- Norris, S. and Ennis, R. (1989). *Evaluating Critical Thinking*. Lawrence Erlbaum.
- Shen, P., & Yodkhumlue, B. (2012). Teacher's questioning and students' critical thinking in college EFL reading classroom. In *The 8th International Postgraduate Research Colloquium: Interdisciplinary Approach for Enhancing Quality of Life IPRC*

Proceedings (online) available at: bsrис. swu. ac. th/iprc/8th/044_53_9_Pingshen.pdf, retrieved (Vol. 17).

Stobaugh, R. (2013). *Assessing critical thinking in middle and high schools: Meeting the Common Core*. New York: Routledge.

Ur, P. (1996). *A course in English language teaching: Practice and theory*. Cambridge: Cambridge University Press.

Yin, R. K. (2018). *Case study research and applications: Design and methods*. Thousand Oaks, California: Sage Publications.

Zepeda, S. J. (2009). *The instructional leader's guide to informal classroom observations*. Larchmont, NY: Eye on Education, Inc.