The Effect of Questioning Technique and Critical Thinking on Students Reading Comprehension

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Abstract: This study aims to determine the effectiveness of questioning technique and critical thinking towords reading comprehension ability of XII MIA 1 and XII MIS 1. The study used a quasi-experimental method with control pre-test and post-test design. The subject of this study are students of the State Senior High School 13 Medan. research sample determines by simple random sampling techniques with 32 students in experiment class and 32 students in control class. The data analysis used in this study is a test of advanced thinking ability. The hypothesis testing method used is the Mann-Whitney test. As a result, it was shown that questioning techniques and critical thinkings are effective in improving students' reading comprehensiaon. The effect of critical thinking of students who follow the instruction based on effective questioning technique in XII MIA 1 is 88,03% (experimental class) and XII MIS 1 is 54,47% (control class)

Keywords : ***questioning technique, critical thinking, Reading comprehension***

I. INTRODUCTION

The science learning process in higher education should have characteristics that reflect interactive, holistic, integrative, contextual, thematic, effective, collaborative, and student-centered characteristics. Various learning models can be used in senior high school, such as collaborative learning, student group discussions, and so on (Curriculum and Learning Team, 2014: 53).

Learning in higher education should be able to involve students to be involved in activities in critical thinking activities (Curriculum and Learning Team, 2014: 59). The teacher can facilitate the development of students' critical thinking through the use of appropriate learning methods and techniques. One of the learning techniques that can be used to develop students' critical thinking is the questioning technique. The questioning technique is the development of the question and answer technique. The question and answer process is an important part of learning that allows educators to monitor the extent of student understanding and competence. The questions involve students actively in learning by thinking and responding.

The problem that occurs is that potential question and answer techniques are still rarely encountered and educators use closed questions which only stimulate lower-level thinking skills (Cooper, 2010: 192). It is very important to provide questions that encourage students to develop their thinking skills compared to closed questions whose answers are only "yes" and no".

Critelli and Tritapoe (2010: 7) state that educators have not implemented questioning techniques. Educators still rely on rhetorical questions and convergent questions that have no effect on student participation and responses. Questions or assignments that trigger students to

think analytically, evaluatively, and creatively can train students to become critical and creative thinkers. Teacher can apply complement their learning with critical thinking questioning techniques. Based on this, research is needed on effective questioning techniques to develop critical thinking for students in grades 12 science 1 and 12 social studies 1.

Questioning is a major form of human thought and interpersonal communication. It involves employing a series of questions to explore an issue, an idea or something intriguing. Questioning is the process of forming and wielding that serves to develop answers and insight. Questioning may also refer to:

- Interrogation, interviewing as commonly employed by law enforcement officers, military personnel, and intelligence agencies with the goal of eliciting useful information
- Scepticism, a state of uncertainty or doubt, or of challenging a previously held belief.
- Questioning (sexuality and gender), a phase or period where an individual re-assesses their sexual orientation/identity and/or gender identity
- Socratic questioning (or Socratic maieutics), disciplined questioning that can be used to pursue thought in many directions and for many purposes.

Xuerong (2012) classified questioning strategy into question planning and question-controlling strategy.

Table .1

Questioning Strategy	
Question-planning strategy	**Question-controlling strategy**
Ask question relevant to students	Phrase the question, then call on the students
Ask open-ended question	Call on specific students to answer question
Ask follow-up question	Call students‟ name when asking a student to answer question
Ask for supporting data/ask for evidence to support a particular point	Select students to response randomly instead of following any set pattern when calling on students.
Ask different types of question	Beware if the students who dominates in class by asking or answering all the questions.
	Give students enough time to think about before answering the question.
	Ask questions of the entire class and try to encourage all students to participate.
	Encourage students to consult with classmate before answering teacher.
	Encourage students to initiate questions
	Move closer to students when asking questions
	Nominate non volunteers
	Repeat the question when there is no response.

	Modify the question when it is not understood

Using strategies in giving questions for students is important to help teachers to know how the students' responses and it can make the students attentive the lesson and engaged the students in the teaching learning process.

Critical thinking is the analysis of available facts, evidence, observations, and arguments to form a judgment (Edward M. Glaser :2017). The subject is complex; several different definitions exist, which generally include the rational, skeptical, and unbiased analysis or evaluation of factual evidence. Critical thinking is self-directed, self-disciplined, self-monitored, and self-corrective thinking (Clarke, John (2019). According to Ennis (2015) , "Critical thinking is the intellectually disciplined process of actively and skillfully conceptualizing, applying, analyzing, synthesizing, and/or evaluating information gathered from, or generated by, observation, experience, reflection, reasoning, or communication, as a guide to belief and action."This definition Ennis provided is highly agreed by Harvey Siegel, Peter Facione, and Deanna Kuhn.

According to Ennis' (2015) definition, critical thinking requires a lot of attention and brain function. When a critical thinking approach is applied to education, it helps the student's brain function better and understand texts differently. Different fields of study may require different types of critical thinking. Critical thinking provides more perspectives upon the same material.

Critical thinking has several characteristics, Emily R. Lai (2011) mentions several characteristics that must be possessed in critical thinking skills, including:

- analyzing arguments, claims, or evidence
- making conclusions using inductive or deductive reasoning
- assessing or evaluating
- making decision or problem solving

Reading comprehension can be interpreted as a series of processes carried out readers to find information and understand the information contained in a reading text (Abidin, 2010:127).

Types of Reading According to Brown (2014) there are three types of reading as below.

1). Perceptive Reading
Perceptive readings involve attending to the components of larger stretcher of discourse: letters, word, punctuation and other graphemes' symbols. Bottom-up processing is implied.

2). Selective Reading
This category is largely an artifact of assessment formats. In order to ascertain one's reading
recognition of lexical grammatical or discourse features of language within a very short.

3). Interactive Reading Interactive reading types are stretches of language of several paragraph to one pages or more in which the reader must, in psycholinguistic sense, interact with the text. Bottom-up processing may be used.

4). Extensive Reading Extensive reading as longer stretches of discourse, such as: a long article,
and books that are usually read outside a classroom hour.

Based on statement above, we know that there are four types of reading included perceptive reading, selective reading, interactive reading and extensive reading. Perceptive reading is ask the students to analyze the letter, word and symbol separately. Selective reading is the process to know the grammatical or the paragraph in the short passage. Interactive reading ask the students to read some text and find the information from the text. Meanwhile extensive reading deals with longer text, this requires student's ability to understand the whole text.

Based on steps above, it can be concluded that steps of teaching reading there are three steps include before reading, while reading stage and after reading. In before reading stage there are many activities that can be done by the teacher such as: simulating students' curiosity, teacher explains the goal and teacher presents the background information. In while reading, the students read the sentences, students answer the question and the teacher guides the students. Then in the after reading stage, students summarize the text, students compare several text, practising reading skill.

II. METHOD

This research is a quantitative research with a quasi-experimental method of Control-Group Pre-test Post-Test Design. This research was conducted at SMAN 13 MEDAN from January to March 2022. The population in this study were XII MIA and XII MIS students. The sample in this study were two classes of the population taken at random. Data collection techniques and instruments used in this study were critical thinking tests and the test instruments used in this study were question sheets in the form of essay tests. The test statistic for the Mann Whitney U Test is denoted U and is the smaller of U1 and U2, defined below.

$$U_1 = n_1 n_2 + \frac{n_1(n_1+1)}{2} - R_1$$
$$U_2 = n_1 n_2 + \frac{n_2(n_2+1)}{2} - R_2$$

where R_1 = sum of the ranks for group 1 and R_2 = sum of the ranks for group 2.

III. RESULTS AND DISCUSSION

The results of the different test show that the critical tinking of the two classes is 33.83%

Table 4.1

Class	result
Experiment	88,03%
control	54,47 %

with the effective questioning technique students get questions or assignments about analyzing, evaluating, and creating learning materials that trigger students to think critically which in turn makes students actively involved in the learning process by thinking and responding. Student responses to these questions will develop critical thinking.

IV. CONCLUSION

The conclusions of the research up to the stage of analyzing the prerequisite test data are as follows:

a) Effective questioning techniques are effectively used in English subjects in XII MIPA 1 and XII MIS 1 to improve critical thinking
b) Increasing the critical thinking of students who take part in learning by using effective questioning techniques

The suggestion from this research is the need for learning that can improve students' critical thinking through other learning techniques

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