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Analysis of Critical Thinking Skills of Prospective Elementary School Teacher Student

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ABSTRACT

Objective: Education is one of the basic needs of humans. The current educational challenge is to produce individuals who can compete in the 21st century. We can access various information freely via the internet, and there is no guarantee that the news we see is true. To use this information properly, individuals must evaluate data and information sources. **Method:** The type of research used is qualitative research. The population in this study is all ESTE FoE Unesa students, and the sample used is the 2018-2020 class. The sample used was class 2019, D, and F, totaling 84 students. The data collection method used in this study is the test. The instrument used in this study was a critical thinking skills test. Data analysis was carried out in percentage terms. **Results:** The results showed that the critical thinking skills of Elementary School Teacher Education Faculty of Education Unesa students were in a low category. The results of this study are expected to be used by lecturers or researchers to design and develop learning activities that can facilitate students to practice critical thinking skills. **Novelty:** Lecturers can design the implementation of learning in the classroom that trains critical thinking skills to become more qualified, effective, and efficient.

INTRODUCTION

The current educational challenge is to produce individuals who can compete in the 21st century. We can access various information freely via the internet, and there is no guarantee that the news we see is trustworthy. The occurrence of an explosion of information from these various sources could result in many being left behind outdated, incomplete, or not credible. To use this information properly, individuals must evaluate data and information sources. Evaluating and then deciding to use the correct information requires critical thinking skills (Basri et al., 2019; Rahman, 2019; Saputra et al., 2019).

The learning process should implement activities that train students' critical thinking skills to provide opportunities for students to hone their critical thinking skills. Critical thinking is a disciplined thinking process that originates from activities and abilities to conceptualize, apply, analyze, synthesize, and evaluate information obtained based on observation, reflection, communication, and action (Rizki et al., 2023; Saphira et al., 2022). Critical thinking is an intellectual process of finding, analyzing, and evaluating information obtained from observation and experience, which will be used to make judgments in taking action (Fitriani et al., 2020; Setiadi & Elmawati, 2019). Therefore, students need to be trained and accustomed to critical thinking skills so that after graduation, they are ready to compete in a global society (Anggraeni & Suratno, 2021; Hidayati & Sinaga, 2019; Kembara et al., 2019).

The Unesa Elementary School Teacher Education Faculty of Education (ESTE FoE) Department is one of several majors at Unesa in general. It is in the Faculty of Education

in particular. The Unesa ESTE FoE Department received a mandate from the government to produce prospective elementary school teachers. To produce graduates who are very good and have reliable qualifications, one of the efforts that can be made is to familiarize students with critical thinking regarding various things in learning materials or applications in everyday life. Critical thinking skills can be trained in learning conducted by a lecturer by inviting students to think openly or think differently. If students are accustomed to thinking critically about a problem given by the lecturer, then these students will be able to compete with graduates from other tertiary institutions, both public and private (Inganah et al., 2023; Simamora, 2020). This also aligns with the government's expectations contained in the IQF at level 6. The general objective of this study was to identify and determine the level of critical thinking skills and responses of ESTE FOE students. The specific objectives to be achieved in this research are to describe the level of critical thinking skills of ESTE FOE Unesa students.

Evaluating and then deciding to use the correct information requires critical thinking skills. When an individual has the ability to think critically, the individual does not just believe in the facts around him without doing proof and trying to prove that the information is valid and can be accounted for. Facione (2015) states that critical thinking is an ability that influences one's life in the future. This is due to critical thinking skills that make a person a good decision-maker. Critical thinking skills are essential to develop because they will be helpful in one's life after school (Bezanilla et al., 2019; Mahanal et al., 2019). However, the current reality is that the thinking skills of high school students, especially critical thinking, still need to improve. One of the reasons for the low quality of students' current thinking is the strong (erroneous) view that students' thinking abilities will automatically develop after students have mastered all subject matter, and new critical thinking education can be taught at an advanced education

level.

Critical thinking is essential because by thinking critically, one will automatically be able to solve simple and complex problems in everyday life (Adilla & Jatmiko, 2021; Ferty et al., 2019; Khoiri et al., 2021; Neswary & Prahani, 2022; van Laar et al., 2020). Previous research examining critical thinking includes: Class learning students should emphasize students' critical thinking skills in the hope of obtaining a pleasant learning experience, more meaningful for students and teachers. The learning process should implement activities that train students' critical thinking skills to provide opportunities for students to hone their critical thinking skills. Students' critical thinking skills can develop if the teacher in teaching and learning activities periodically displays critical thinking skills in every step of learning, which will later be helpful for their provision of life (Saphira & Prahani, 2022).

In general, the definition of critical thinking skills put forward by experts can be summarized by Facione (2015), who argues that the core of critical thinking is part of cognitive skills, which include interpretation, analysis, evaluation, inference, explanation, and self-regulation (self-regulation). Interpretation is a person's ability to understand and state the meaning or intent of various experiences, situations, data, events, decisions, conventions, beliefs, rules, procedures, or criteria. Analysis ability to identify the correct intent and conclusion between statements, questions, concepts, and descriptions based on beliefs, decisions, experiences, reasons, information, or opinions (Astuti, 2019). Evaluation is the ability to assess the credibility of statements or other

presentations by assessing or describing one's perceptions, experiences, situations, beliefs, and decisions and using the logical power of expected inferential relationships or actual inferential relationships among statements, questions, descriptions, or other forms of representation (Azizah et al., 2018).

Inference is the student's ability to identify and select the elements needed to form reasoned conclusions or to form reasoned conclusions or to form hypotheses by paying attention to relevant information and reducing the consequences arising from data, statements, principles, evidence, judgments, opinions, descriptions, statements, beliefs, or other forms of representation (Rohmah & Prahani, 2021). The explanation is one's ability to state the results of the consideration process, the ability to justify that a reason is based on evidence, methodology, concept, or specific criteria and reasonable considerations, and the ability to present reasons in the form of convincing arguments (Basri et al., 2019).

Self-regulation relates to one's awareness to monitor one's own cognition, the elements used in pro, thinking, and results developed, especially by applying skills in evaluating one's ability to draw conclusions in the form of questions, confirmation, validation, and correction. In this study, researchers used questions that had been developed referring to indicators of critical thinking skills from Fascione. The six indicators of critical thinking skills developed by Fascione are further divided into six types of skills according to Nur (2013), as shown in **Table 1**.

Table 1. Critical thinking core skills and sub-skills.

Skills	Sub-Skills	Description
Interpretation	Categorization Coding Clarification of meaning	Understanding and expressing the meaning or significance of various experiences, situations, data, events, judgments, conventions, beliefs, rules, procedures, or broad criteria.
Analysis	Assessment of Argument ideas Argument analysis	Identify inferential relationships between statements, questions, concepts, descriptions, data, or other forms of representation intended to express.
Evaluation	Evaluate Claim Assessing arguments	To assess the credibility of statements or other representations that provide explanations or descriptions of one's perceptions, experiences, situations, judgments, beliefs, or opinions and to assess the logical strength of actual or intended inferential relationships, including statements, descriptions, questions, or other forms of representation.
Inference	Questioning evidence Suspect alternatives Drawing conclusions	Identify and define the elements needed to draw reasonable conclusions, formulate conjectures and hypotheses, consider relevant information, and reap the consequences that flow from data, reports, principles, evidence, judgments, beliefs, opinions, concepts, descriptions, questions, or other forms of representation.

Skills	Sub-Skills	Description
Explanation	Declare results Justify the procedure Presenting arguments	Stating the results of reasoning, justifying the reasoning based on considerations of evidence, concepts, methodologies, criteria, and context, Present reasoning in the form of a convincing argument.
Self-regulation	Self-assessment Self-correction	Be aware of helping one's cognitive activities, the elements involved in the activity, and the results obtained, especially by applying analytical and evaluating skills.

RESEARCH METHOD

Descriptive research is intended to find out and investigate a situation or condition, the results of which are presented in the form of a research report. Descriptive research aims to make systematic, factual, and accurate descriptions, drawings, or drawings regarding the facts and the nature of the relationships between the phenomena investigated. The type of research used is qualitative research, which aims to make a systematic and factual description of the facts of a population. The population in this study were all students of the 2018-2021 ESTE FoE Unesa Department, and the sample used for the 2019 class D and F classes totaled 70 students.

The data collection method used in this study is the test. The instrument used in this study was a test of critical thinking skills. In this study, test questions were used, consisting of five essay questions adapted to critical thinking indicators, including analysis, evaluation, arguments, and self-regulation (Heflin et al., 2017; Prayogi et al., 2018; Widana, 2017). The data that has been collected is then assessed (each question has a score of 0-4). After the scoring, an analysis is carried out in the form of a percentage to determine student dominance in critical thinking skills. Data analysis used quantitative descriptive analysis to process the data obtained as percentages. The percentage data obtained through descriptive analysis is carried out to provide a general description of the critical thinking skills profile of ESTE FoE Unesa students. The results of calculating the percentage of all components to provide meaning and decision-making use the provisions in **Table 2**.

Table 2. Percentage category of critical thinking skills.

Percentage Rate (%)	Qualification
81-100	Very high
61-80	High
41-60	Medium
21-40	Low
0-20	Very low

Adaptation Karim (2015)

The data obtained will be analyzed descriptively, qualitatively, and quantitatively, describing the level of critical thinking skills of ESTE FoE Unesa students.

RESULTS AND DISCUSSION

Results

Per the data obtained and carried out, an analysis related to the percentage of achievement of critical thinking skills of ESTE FoE Unesa students can be seen in **Table 3**.

Table 3. Results of the percentage of achievement of critical thinking skills.

Critical thinking skills indicator	2019D (%)	2019F (%)
Analysis	39.8 (low)	38.8 (low)
Evaluation	38.2 (low)	39.3 (low)
Provide arguments	38.8 (low)	38.7 (low)
Self-regulation	37.6 (low)	38.4 (low)
Total	154.4	155.2
Average	38.6 (low)	38.8 (low)
Total average	**38.7 (low)**	

Discussion

Based on **Table 3,** the results of the analysis of the critical thinking skills of ESTE FOE Unesa class 2019D students on the indicators of analyzing, evaluating, giving arguments, and self-regulation obtained consecutive percentages of 39.8%; 38.2%; 38.8%; 37.6% with low category. The average percentage of the achievement of critical thinking skills for ESTE FoE Unesa class 2019D students obtained 38.6% in the low category.

The results of the analysis of the critical thinking skills of ESTE FOE Unesa class 2019F students on the indicators of analyzing, evaluating, giving arguments, and self-regulation obtained consecutive percentages of 38.8%; 39.3%; 38.7%; 38.4% with low category. The average percentage of the achievement of critical thinking skills for ESTE FoE Unesa class 2019F students obtained a percentage of 38.8% in the low category. In the low category, the average percentage of achieving critical thinking skills for all ESTE FoE Unesa class 2019F students is 38.7%.

The critical thinking skills of ESTE FoE Unesa class 2019D and F, which tend to be low, occur because students have never had or have lacked practice in learning. Classroom learning does not empower critical thinking skills in acquiring knowledge. Learning strategies or models that need to train students in thinking skills. Students' input comes from various schools or is heterogeneous, for example, high school, vocational school, and Islamic boarding schools. Based on the results of the analysis in **Table 3**, it is known that the critical thinking skills of ESTE FoE Unesa students in class 2019D and F are classified in the low category. Students' low critical thinking skills are caused by a lack of activities that lead to critical thinking and training in the learning that is carried out (Anazifa & Djukri, 2017; Ulger, 2018; Utami et al., 2017; Vong & Kaewurai, 2017). Students' lack of basic knowledge resulted in them needing help to solve the problems appropriately posed.

Classroom learning conducted by lecturers also needs more critical thinking skills. Critical thinking is a mental process that is well organized and plays a role in the decision-making process of solving problems by analyzing and interpreting data in scientific investigation activities (Ahern et al., 2019; Akramova, 2021; Mahdi et al., 2020; Rahmawati et al., 2019). This can be seen from the monotonous learning activities that are carried out, which do not explore students' critical thinking skills, limited learning resources, and do not explore phenomena around the environment. Critical thinking skills can be raised through strengthening concepts and appropriate learning activities (Baguma et al., 2019; Kane et al., 2016; Medina et al., 2017; Putra et al., 2018). One of them is by using specific active learning models that contain activities that foster critical thinking. The learning experiences gained by students influence critical thinking

activities. If, during the learning process, students are often given exercises or activities to carry out critical thinking activities, then students will have good development of critical thinking skills. Lecturers must choose a learning model involving students in practicing critical thinking skills. Critical thinking is reasonable and reflective thinking focused on deciding what to do or believe. Reasonable thinking implies thinking based on facts to produce the best decisions, and reflective thinking means consciously and decisively seeking the best possible solutions.

Critical thinking skills are operational reasons and considerations used in deciding or evaluating the complexity of a problem faced by modern life. Critical thinking skills are skills that cannot be inherited and are not directly owned by students, so training is needed so that these skills can be owned by students, especially students who are prospective elementary school teachers (Karatas & Zeybek, 2020; Menon & Castrillon, 2019; Özelçi & Çalışkan, 2019; Peasland et al., 2019; Suratno et al., 2019). Critical thinking skills must be possessed by student-teacher candidates, considering that these students are prepared to educate students at school. For students to be trained in their critical attitude, the teacher must also have the attitude and skills of critical thinking first. Students with critical thinking skills will find it easier to solve a given problem. However, good critical thinking skills are obtained from good science process skills (D'Alessio et al., 2019; Gunawan et al., 2019; Shavelson et al., 2019).

CONCLUSION

Fundamental Finding: Based on the results of the analysis and discussion that has been carried out, it can be concluded that the critical thinking skills of ESTE FOE Unesa class 2019D and F students have an average in the low category while science process skills have an average in the medium category. This shows the need for improvements in learning for the following year so that ESTE FoE Unesa students can develop critical thinking skills in the learning they participate in. **Implication:** It is hoped that lecturers or researchers can use the results of this research to design and develop learning activities that can facilitate students to practice good critical thinking skills through activities based on Science Process Skills so that students can get used to using these skills in learning. **Limitation**: The lecturer conducted this research to determine the critical thinking skills of prospective elementary school teachers. **Future** research: Lecturers are expected to continue to make learning innovations in improving critical thinking skills for prospective elementary school teachers, developing professionalism, and working to improve the quality of learning, which aims to produce quality graduates by the needs of the world of work in the field.

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