Preparing Basic Competencies and Skills for Students by Developing Critical Thinking Skills

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Abstract. This paper was conducted to examine the preparation of competency and ability debriefing of students with the development of critical thinking skills. The purpose of this study was to determine the role of critical thinking skills in preparing competent and highly skilled graduates who are ready to enter the world of work. The research method used is to use a literature review from various sources that examine the importance of developing critical thinking skills in preparing students' competencies and abilities. The results show that critical thinking skills are very important for a student to have in an effort to prepare the 21st century generation that is able to be competitive and solve various challenges in the future.

Keywords: student competence · student ability · critical thinking ability

1 Introduction

Preparing students to think critically is one of many universities' main goals and a quality that most employers seek for university graduates [1]. Under the Indonesian revolution 5.0, thinking critically is the central pillar in preparing students as the nation's next generation who are ready and responsive to economic and technological developments [2]. With the 5.0 revolution, students, as the nation's successors, are expected to be able to compete with the global labor market, which demands high competence and mastery of soft and hard skills.

Plato demonstrated more than 2,500 years ago in his study of logic that critical thinking is a technique that aids people in finding answers or solutions to their difficulties and confusion [3]. Plato's teacher, Socrates, held that information should be analyzed and discussed by the individual, not by the teacher passing down knowledge to the pupils [4]. Scholars and educators continue to debate the mechanisms, significance, and results of critical thinking abilities nearly 2,500 years later (or lack thereof).

Contemporary evidence on the importance of critical thinking skills for employment is available in the National Association of Colleges and Employers [NACE] (2016), which shows that critical thinking/problem-solving skills are ranked the most important in the results of a survey of 144 employers conducted [5] (Table 1).

Table 1. How Employers Assess Career Readiness Competencies in terms of Their Essential Needs

Competence	Essential Necessities
Critical Thinking/Problem Solving	4.7
Professionalism/Work Ethics	4.7
Teamwork/Collaboration	4.6
Oral/Written Communication	4.4
Information Technology Application	3.9
Leadership	3.9
Career Management	3.6

Notes. Weighted average. Rated on a 5-point scale where 1 = Not important; 2 = Not very important; 3 = Somewhat important; 4 = Important; 5 = Very important.

This is in line with research findings [6] that demonstrate how higher education is necessary for the development of critical thinking abilities, which then result in higher order thinking. This is also in line with [7], which claims that critical thinking abilities consistently appear on all lists of prerequisites for success in college and the workforce [8].

Preparing students with the essential competencies and skills needed in the world of work by developing critical thinking skills is an effort that the institution can make to provide supplies in the swift competition of the labor market.

The significance of critical thinking abilities in 21st-century education and the workforce has also been covered extensively by academics and researchers [1]. [2] It highlights the need of critical thinking instruction for students' readiness to function in the contemporary workplace of the twenty-first century. [8] Showcase the value of the twenty-first century and the critical thinking abilities that students need for technical and vocational training (TVET). In line with studies by Chaiyasut, Samuttai, Phuwiphadawa, and Intranet [9], which demonstrate that critical thinking is one of the 13 learning markers, this is done. Information and communication technology (ICT) should be employed in problem-solving and more critical thinking, according to the Organization for Economic Co-operation and Development (OECD) and United Nations Educational, Scientific and Cultural Organization (UNESCO) study [10]. The Directive of the European Union [10] focuses on learning outcomes for employment, innovation, active citizenship, and well-being while highlighting the essential need for high-quality knowledge, skills, and competences acquired via learning. [11] Discuss connectivity and its meaning in the digital age and knowledge part-time, defined as the period from when knowledge is acquired to become obsolete, with the amount of knowledge doubling every 18 months.

Connectivism is driven by the understanding that decisions are based on rapidly changing foundations. New information is constantly being obtained. The ability to distinguish between important and unimportant information is crucial (critical thinking). The ability to recognize when new information changes the landscape based on yesterday's decisions is also essential.

Based on the explanation above, the researcher wants to conduct research entitled "Preparing Basic Competencies and Skills for College Students by Developing Critical Thinking Skills."

1.1 Statement of the Problem

Since Plato recognized the value of critical thinking abilities 2,500 years ago, many scholars have written about the significance of critical thinking in education [12]. In addition to this body of study, numerous recent studies have focused on the value of critical thinking in the knowledge-based economy and the workforce of the twenty-first century [9]. Critical thinking and innovation are the primary foundations for future progress, wealth, and a higher standard of living according to the Indonesia 5.0 program. In order to educate students for their vital competencies and skills, experts looked into how to foster critical thinking abilities.

2 Literature Study

Critical thinking skills have been identified as essential life skills [13], with the current literature revealing that explicit instruction and practice of critical thinking strategies in universities can improve student academic performance [14]. UNICEF, UNESCO, and WHO list problem-solving and critical thinking as two of the ten core life skills strategies and techniques [13].

According to recent research, specific training and practice of critical thinking techniques in universities might boost students' academic performance. Critical thinking abilities have been identified as vital life skills [13]. Problem-solving and critical thinking are two of the 10 essential life skills tactics and procedures, according to UNICEF, UNESCO, and WHO [14].

Socrates, who believed that education was nothing more than a test of life itself, serves as an example for philosophy teachers [15]. Socrates was a non-dogmatic teacher who rigorously questioned his students' opinions more than 2,500 years ago [14]. This procedure has two goals: to demonstrate to them that they are mistaken about what they believe they have done and to inspire them to think critically about their positions. [16] Thai undergraduate students were taught using the Socratic method, which demonstrated the existence of three critical thinking skills. Recognizing assumptions, assessing arguments, and reaching conclusions are all included in this. The Socratic approach, according to Paul and Elder [11], is the most effective way to teach critical thinking abilities. It is obvious that critical thinking is crucial for success in the classroom, in job, and most importantly in daily life [10], yet critical thinking is not sufficiently taught or assessed in today's college environments or curricula.

[9] Also mentioned was the importance of teacher preparation for imparting critical thinking. Also, being an influential critical thinker significantly contributes to being an effective teacher. Four essential abilities are tested in the Cornell Level X Critical Thinking Test. According to studies on how teachers think, four skills are necessary for good instruction. These include inductive reasoning, judging the veracity of the observation report, deductive reasoning, and assumption identification. In order to discuss critical thinking, the National Council for Excellence in Critical Thinking (NCECT) [17] meets annually. According to NCECT, critical thinking is the intellectually disciplined process of actively and skillfully conceptualizing, applying, analyzing, synthesizing, and evaluating information as a guide to beliefs and action. This information is gathered from, or generated by, observation, experience, reflection, reasoning, or communication.

Today, applying critical thinking strategies can also prepare students for the rigors of university life and help them develop the skills necessary to compete economically in a globalized environment [18]. However, [19] warns that more and more children are growing up with passive activities such as TV, video games, and the internet. Therefore, teaching critical thinking is one of the most crucial class loads, if not the most difficult.

Without much thought, critical thinking requires multiple phases, mostly performed by adults [20]. These include recognizing the issue, formulating a goal, coming up with a list of potential solutions, considering potential results, putting one of the answers into practice, and assessing the consequences. However, [21] demonstrated that early learners do not develop or apply critical thinking skills very much during primary and later education. As a result, the instructor must assist students in acquiring the abilities necessary to assimilate the intricate intricacies of contemporary society.

It is important to impart critical thinking, decision-making, and information-gathering abilities to junior high and senior high school pupils as they grow. Additionally, people need to know how to assess the long-term effects of their current behavior as well as that of others. They must be able to choose between different options and consider how their own beliefs and the values of others around them have an impact [22]. A wider view of a problem can be seriously investigated by trained critical thinkers instead of taking facts for granted. The National Association for Media Literacy Education supports explicit critical inquiry instruction, encouraging students to conduct active research and apply critical thought to the communications we receive and produce. Students' capacity for in-depth problem-solving provides a platform from which to speak out against injustice [23]. It takes systematic, purposeful, and repetitive exposure and practices for pupils to develop insightful thinking; critical thinking skills are not acquired spontaneously or effortlessly. The University of Leeds (n/d) also lists the essential steps in critical thinking, such as:

1. Describe – clearly define what you are talking about, what is precisely involved, where it happened, and under what circumstances.
2. Reflection – reconsidering a topic in light of new information or experiences or considering another point of view.
3. Analyze – Examine something, then describe how it works, making sure to compare and contrast its many components and comprehend how it relates to your subject or issue.

4. Criticizing – identifying and examining an argument's weaknesses and acknowledging its strengths. It is vital to consider criticizing neutral and not harmful.
5. Reasoning – using techniques like cause-and-effect to show logical reasoning and providing evidence that supports or refutes a claim.
6. Evaluating – includes making judgments about the worth of something or the success or failure of something.

Critical thinking is based on the capacity to evaluate problems and respond creatively to them. Critical thinking, according to [24], offers a means of mind-training. [25] also analyzes reflective thinking in terms of critical thinking, which is an emotional and intellectual component and is restless in accepting the current quo. To investigate, encourage, question, and reflect on what they have learnt, students must be educated. It is crucial to be skeptical, to ask questions, and to reflect. [25] added that there should be strong linkages between schools and the communities they serve.

2.1   Research Objective

The primary purpose of this study is to determine the preparation of essential competencies and skills for students.

3   Methodology

3.1   Data Collection

Primary and secondary data were obtained from the essence of previous studies. The first step in collecting data is to find sources in the form of international articles. Furthermore, the researchers made a summary and drew conclusions from each article obtained.

The research method used in this research is a literacy study. Literacy study is a research method that collects data by concluding the results of previous research.

4   Result and Discussion

Critical thinking skills in learning can be developed using various student-centered learning methods. The methods to develop critical thinking skills in science learning include Problem Based Learning, Project Based Learning, 5L Learning, and Learning cycle [16].

In addition to designing methods that can improve critical thinking skills, it is also necessary to design evaluation and assessment tools that aim to improve student's critical thinking skills. Because the evaluation will require students to show maximum performance as a form of achievement of learning achievement, if the test given requires students to develop their critical thinking skills, then students will try to practice their critical thinking skills. Evaluation or assessment of critical thinking skills consists of various forms that are adapted to needs, including critical thinking skills test questions that are integrated with learning, peer assessment in the form of questionnaires, questionnaires, checklists, and so on, or can be in the form of observations, interviews or

written tests [26]. In addition, it is necessary to increase the role of teachers and lecturers in developing students' critical thinking skills by no longer using teacher- centered learning methods.

Teachers and lecturers should act as drivers, facilitators, motivators, and companions in learning. Teachers must provide opportunities for students to develop themselves. For this reason, teachers and lecturers must also systematically develop materials and curricula to train students to develop their critical thinking skills. Teachers and lecturers are also required always to develop professionalism and competence in their field of expertise. So that they can plan, implement and conduct evaluations that are beneficial for the development of the quality of learning. Giving more attention to the skills that need to be developed by students, not only critical thinking skills but also collaboration, communication, and creativity skills known as the 4Cs must be continued. These four skills need to be honed and developed by students, especially prospective teachers, as a form of readiness to face the era of industrial revolution 5.0. Thus, students are ready to compete and face the 5.0 industrial revolution.

5   Conclusion

Based on the literacy studies that have been carried out, it can be concluded that one of the essential competencies and skills that must be possessed is critical thinking skills. Critical thinking skills are essential in all fields, even 2,500 years ago. Teachers or lecturers must do several stages to build creative thinking skills in students, one of which is applying a student-center-based learning model.

Authors' Contributions. Wiwik Sri Utami as lead researcher in collaborative research from the faculty of social sciences and law. M. Turhan Yani, Ita Mardiani Zain, Iya Setyasih are members of a collaborative research in 2022.

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