

## **Cultivating Critical Thinking Skills in EFL Student Teachers through Online Learning**

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### **ABSTRACT**

Since the current paradigm of competency in higher education requires the integration of critical thinking skills and information literacy from diverse perspectives and cultures into the learning process, student teachers need to be able to communicate effectively through problem-solving and critical analysis from some points of view. This current study examines how EFL student teachers can cultivate students' critical thinking skills and disposition during online learning mode. The interaction process serves as the primary focus of this ethnographic case study. An observation sheet and an interview technique were utilized in conjunction with the focus-group discussion as the instruments. The participants were 23 student teachers who were currently enrolled in the Educational Technology in ELT course. This course purposes to offer students with important knowledge and practical aspects of teaching aids or media in English as a foreign language teaching. From the data analysis, the findings showed that when critical thinking skills are integrated into instruction, student teachers have the opportunity to enhance their critical thinking and disposition. In order to eliminate the possibility of bias and ensure a reliable assessment of critical thinking abilities, it is recommended that future studies use samples that are both larger and more broadly representative.

**Keywords:** Critical thinking, EFL student teacher, scaffolding, online learning

### **ABSTRAK**

Berdasar pada paradigma kompetensi di perguruan tinggi yang saat ini membutuhkan integrasi keterampilan berpikir kritis dan literasi informasi dari berbagai perspektif dan budaya ke dalam proses pembelajaran, mahasiswa calon guru harus mampu berkomunikasi secara efektif melalui analisis kritis dan pemecahan masalah dari berbagai sudut pandang. Studi ini mempelajari bagaimana mahasiswa calon guru EFL dapat menumbuhkan keterampilan dan disposisi berpikir kritis siswa selama mode pembelajaran online. Proses interaksi menjadi fokus utama dari studi kasus etnografi ini. Lembar observasi dan teknik wawancara digunakan bersamaan dengan diskusi kelompok terarah sebagai instrumennya. Partisipan dari penelitian ini adalah 23 mahasiswa calon guru yang saat ini terdaftar dalam Teknologi Pendidikan dalam kursus ELT. Kursus ini bertujuan untuk membekali siswa dengan pengetahuan penting dan aspek praktis alat bantu pengajaran atau media dalam pengajaran Bahasa Inggris sebagai bahasa asing. Dari analisis data, temuan menunjukkan bahwa ketika keterampilan berpikir kritis diintegrasikan ke dalam pengajaran, mahasiswa calon guru memiliki kesempatan untuk meningkatkan pemikiran kritis dan disposisi mereka. Untuk menghilangkan kemungkinan bias dan memastikan penilaian kemampuan berpikir

kritis yang andal, disarankan agar penelitian selanjutnya menggunakan sampel yang lebih besar dan lebih representatif.

**Kata Kunci:** Berpikir kritis, mahasiswa calon guru EFL, scaffolding, pembelajaran online

## INTRODUCTION

Critical thinking is one of the elements of 21st-century learning and has become an educational challenge in higher education. This is consistent with the National Education System Law No. 20 of 2003, which states, “National education functions to develop capabilities and shape the character and civilization of a dignified nation within the context of educating the nation’s life, aiming to develop the potential of students to become human beings who believe in and fear God Almighty, have noble character, are healthy, knowledgeable, capable, creative, independent, and become democratic and responsible citizens” (UURI No 20 Tahun 2003 about Sistem Pendidikan Nasional, 2003). In order to generate graduates with a high level of competitiveness and who are prepared to confront the challenges of the times, higher education must promote critical thinking. Students with the ability to think critically can build innovation in response to the 4.0 industrial revolution. They are accustomed to systematically solving problems and making independent decisions; thus, they never cease learning throughout their lives. Consequently, critical thinking abilities are essential to student achievement.

Critical thinking is the capacity to analyze, evaluate, and interpret data in scientific discovery activities; hence, reasoning abilities are necessary for students to succeed in the workplace (Wei, 2018). Problem-solving also requires critical thinking because, with critical thinking, students are able to approach challenges from a variety of angles (Widodo, 2016). Students must be able to interpret, analyze, evaluate, conclude, explain what they think, make judgments, and generate ideas or innovations for problem-solving in order to develop critical thinking. Therefore, measuring students’ critical thinking skills during problem-solving exercises is vital. We require a criterion that may be utilized as a guide to determine the level of pupils’ critical thinking abilities.

However, the facts indicate that Indonesian pupils’ critical thinking ability remains relatively poor. In 2009, Indonesia rated 60<sup>th</sup> out of 65 nations on the Program for International Student Assessment (PISA), 64<sup>th</sup> out of 65 countries in 2012, 69<sup>th</sup> out of 75 countries in 2015, and 72<sup>nd</sup> out of 77 countries in 2019 (OECD, 2019; 2016; 2014; 2010). It indicates that Indonesian students have not been instructed to think critically, resulting in a low degree of critical thinking among them. As a direct consequence of this, the kids are not very good at expressing their thoughts, reasoning, or finding solutions to issues (Indah & Kusuma, 2016). Furthermore, according to a study, EFL classes in Indonesia employ standard teaching methods or what is widely known as the traditional learning strategy. The teacher dominates the learning process in the classroom (Yuliani & Lengkanawati, 2017). Consequently, these approaches rely mostly on memorizing and recitation techniques, which no longer match the demands and aspirations of the learners. Learners play a minor role. Thus, they receive information without interacting with it or attempting to relate it to their everyday practical experiences.

Students mostly adhere to the teachers’ instructions, which are considered as the sole source of information. Consequently, students are extremely docile and reliant on the educator. They are only able to acquire lower-order thinking abilities and cannot analyze or propose answers to problems. Next, the assessment orientation of teachers consists of

stringent question-and-answer tests since success is determined by memorization (Widodo, 2016). Additionally, in Indonesian society, passing the exam is frequently regarded as the major objective, although problem-solving, creative thinking, and critical thinking skills are regarded as secondary. The circumstance suggests that kids have poor levels of critical thinking. It demonstrated that the school system mainly relies on memorization. It does not promote critical thinking, which assists students think sensibly about topics, reflect on ideas, and make intelligent decisions among alternatives (Lunenburg, 2011).

Although thinking is natural for all humans, it is not natural for humans to think well, so their thought process should be worked to promote critical thinking since the ability to think critically is not supposed to come naturally to everyone (Wang & Zheng, 2016). However, it can be enriched with appropriate guidance and practice. Most academics and classroom teachers concur that fostering students' thinking skills, particularly through critical thinking-integrated instruction (CT), is one of modern education's most pressing learning objectives (León et al., 2014). Thus, tertiary educational teachers must design proper methods and techniques for learning and teaching (Saadé et al., 2012). Lecturers are expected to integrate CT skills into their pedagogy for CT skills are a crucial element of academic literacy for student teachers at tertiary institution.

Innovation in the learning process is one of the strategies for fostering critical thinking skills. In order to continue the learning process amid a pandemic, information technology has become the principal medium for online learning applications (Saade et al., 2011). Rapid advancements in information, network, and multimedia technology have offered a crucial technical opportunity that has made constructivist learning via the Internet more feasible and simpler to implement. Information technology has facilitated online learning to support the development of students' critical thinking skills through Learning Management System (hereafter LMS). LMS is a web-based learning room that connects lecturers and students to (1) post modules, share video links, PPT, assignments, and online quizzes, (2) construct discussion groups, (3) announce grades, and (4) conduct meetings virtually (Mishra & Koehler, 2008).

To construct student-centered learning, instructors might utilize VINESA-integrated technologies (LMS). The VINESA LMS can pique students' interest in learning since it displays graphics, audio, video, and animation as well as formative testing, so making learning more engaging, and because it offers features that are tailored to student characteristics and independent of one another (Spector et al., 2014). Utilizing the VINESA LMS is a sort of e-learning that can enhance instructors' abilities to incorporate Technological Pedagogical Content Knowledge (TPACK), consisting of three fundamental knowledge components: technology, pedagogy, and content. These include intuitive knowledge and comprehension of teaching subjects with appropriate pedagogical and technological methods (Chai et al., 2011). When lecturers facilitate the learning process, they use content that conforms to pedagogical and technical techniques so that it can serve as the foundation for employing successful technology (Mishra & Koehler, 2008).

The usage of VINESA LMS as a form of TPACK application in learning makes learning more successful since VINESA LMS can enable students to study anywhere and at any time to gain proficiency. It can also boost students' knowledge, skills, learning independence, and critical thinking abilities. VINESA LMS is a web-based learning environment that allows instructors and students to upload modules, share something (video links, PowerPoint presentations, assignments, and online exams), create discussion rooms, and conduct virtual meetings. In addition, it encourages the establishment of an online learning community to cultivate cognitive skills (Ricci, 2013). Students discuss and

collaborate to analyze, solve difficulties, and reach a conclusion on a topic, thereby enhancing their critical thinking skills (Facione, 1990).

To develop critical thinking skills and disposition of students, a structural approach to comprehending problems and arguments, as well as metacognitive skills (monitoring and reflection) (de Bie et al., 2015) in several areas, must be addressed. Instructors must act as facilitators capable of fostering critical thinking skills and disposition through interactions with students and assessments conducted throughout the online learning process. It facilitates more student-centered so that students participate actively in the learning process. Using a variety of activities can also foster skills in analyzing, assessing, problem-solving, producing, and metacognitive skills. These exercises can also motivate students to actively engage in collaborative learning activities that strengthen their critical thinking skills.

There are various strategies to develop students' critical thinking skills in language learning. The use of Asynchronous Online Discussions (AOD) platform can encourage learners to interact, discuss, and handle a certain issue (Osborne et al., 2018; Ricci, 2013). Furthermore, online learning interaction can accommodate learners to debate, contrast, and challenge the argument between one another in their group assignments (Ricci, 2013; Lunney, 2019; Afify, 2019). It has been shown that online learning is not limited by time, so some instructional strategies aim to promote critical thinking skills (Butler et.al, 2017). However, to date, only a small number of studies have investigated the cognitive and dispositional components of online learning for English student teachers, especially in Educational Technology in ELT course. Therefore, the research questions of this study are "how can EFL student teachers cultivate students' critical thinking skills and disposition during online learning mode?".

The study is in line with modern educational trends employing attention to critical thinking and the use of ICT. This study also improves the methods of university teaching, especially since it is engaged in the use of the constructivist approach to learning using ICT. The significance of current research stands out through its focus on student teachers in English Language Education in Universitas Negeri Surabaya who are preparing to become English teachers in the future. Subsequently, developing critical thinking skills will entail a wide range of thinking abilities that will benefit students' future practice and aid in obtaining desired objectives one of the most essential methods universities seek to adopt. It is also worth pointing out that, in light of the COVID-19 pandemic, a growing number of higher education institutions around the world have switched to remote learning in an effort to contain the virus and prevent its spread.

## **METHOD**

### **RESEARCH DESIGN**

It is a case study employing an ethnographic methodology in an Educational Technology in ELT class in which the researchers served as teachers. During the implementation process, the researchers conducted observations throughout the semester and interviews with group members in the form of reflections at each meeting. The ethnographic approach has centered on the interaction process related to culturally influenced differences in the perspectives of individuals. It was intended that the concept of critical thinking and disposition would be applied to each activity during the semester. Additionally, it was anticipated that a pattern and meaning of each behavior, language, and interaction in groups might be acquired in relation to particular cultural backgrounds.

## RESEARCH SUBJECT

This study involved English student teachers (N = 23) who attended the Educational Technology in ELT class in English Language Education. This course purposes to offer students with essential knowledge and practical aspects of teaching aids or media in English as a foreign language teaching. It also builds up their critical thinking skills as prospective language teachers. This class is worth two credits, and the observations are carried out in four meetings over the semester.

The following describes the research methodology. The first is the instructor submitted all course materials to the VINESA LMS. Secondly, the lecturer has provided opportunities for several cases, and students must select cases and create learning media based on cases and instructions. In group work, students could communicate their thought based on their knowledge and competence through group problem-solving activities. Thirdly, when students have completed a draft of learning media, they could upload it in LMS to get feedback from the lecturer. Lecturers could comment on their students' work, and they must revise it based on their comment. Next, the group discussion has presented their revised work via zoom meeting. In this case, students needed to participate in critical discussion and arrange for feedback to their other members. The course instructor provided a peer-evaluation form to assist them evaluate each other's practice and gave constructive comments. Then, writing reflective was reviewing their media. The students needed to systematically reflect on the effectiveness of their teaching, which was a kind of individual reflection.

## DATA COLLECTION AND DATA ANALYSIS

Classroom observation (field note study) was conducted to convey students' critical thinking skills and disposition. Next, students' individual interviews and personal reflections were utilized to obtain data. All authors performed semi-structured interviews with each student to study their learning and reflection experiences as a result of the reflective assignment, as well as their identity formation during the semester. Students were asked to describe their interaction and collaboration with their group mates during the assignment (e.g., collaborative learning media and lesson planning), as well as their participation in reflective tasks and perceived effectiveness of reflection in their teaching process and learning. Students were also asked to reflect on their identity construction in relation to their interactions with their instructor and group mates, such as the shared conversation about developing learning media, through their reflective assignment.

All interviews were conducted and audio recorded in the students' native language (Indonesia), the language in which they felt most comfortable. The student teachers' reflections (in English) were also collected, in which they provided their reflective analysis regarding their peer-teaching based on their self-assessment in the course. The acquired data was quantitatively and qualitatively examined. A questionnaire was used to collect quantitative data, namely information about students' critical thinking skills and disposition. Classroom observations and integrated interviews with student groups were used to collect qualitative data. Furthermore, the acquired data was thematically examined using a 6-step thematic content analysis. The six stages of thematic analysis are seen to offer a clear and helpful framework for carrying out thematic analysis in instructional activities; this framework is arguably the most influential and practical technique in the social sciences at least.

## FINDINGS AND DISCUSSION

To cultivate students' critical thinking skills in online, covering some areas including inferences, recognition of assumption, interpretation, and evaluation of arguments and creating. It was illustrated in this Table 1.

Table 1. Activities for Developing Students' Critical Thinking

Aspects of Critical Thinking Skills	Activities	Indicators of Achievement (%)
Recognition of assumption	Given questions to encourage students to participate in questions posers.	83
Inference	Given opportunities to motivate students to draw inferences from various English source materials (including articles and types of media) by writing an appropriate title or summary for the content.	82
Recognition	Given a set of case study, students were asked to determine the most suitable media that can be used.	70
Interpretation	Students demonstrate their comprehension of the causal relationships implied by source materials.	64
Evaluation	Participants wrote a personal reflection paragraph for a certain issue which discussed the process of teaching and learning.	63
Creating	Students created media based on the case provided by the lecturer.	60
<b>Average</b>		<b>70.5</b>

From the table above, it can be concluded that the level of critical thinking skills of English student teachers during online learning is 70.5, and it can be said that they are at the medium level. From various components of thinking skills, recognition and inference are at good levels. However, the aspects of interpretation, evaluation, and creation are at low level. The most challenging talents are those required to create learning media. Almost all student teachers are able to generate learning media, but they have not been able to create media that attracts and motivates their students. It can be said that their creativity should be improved.

Instructional strategies for online learning must emphasize social constructivist principles, such as collaborative learning, scaffolded learning, and case study in order to cultivate students' critical thinking skills. Implementing several online learning tasks integrated into a teacher's lesson could promote argument, evaluation, synthesis, and conclusion on a certain issue. Understanding argument structure and developing reflective and metacognitive skills, like monitoring and reflection (de Bie et al., 2015), helped teachers and students see their own biases (recognition of assumptions) and build a critical viewpoint for examining different perspectives (evaluation of arguments).

Case study-based teacher questioning was emphasized throughout online learning and designed to enhance students' critical thinking skills (Rahimi & Soryani, 2014). In this study, English student teachers were able to employ Socratic questioning techniques (awareness of assumptions) and activities, such as deductive logic scenarios (deduction) and personal reflection (interpretation), which are crucial for the development of critical thinking skills. In other situations, direct instruction of critical thinking abilities was provided (Yaiche, 2021), especially for deductive and inductive logic (analysis), which needed student teachers to gain reasoning skills.

Moreover, the usage of many tasks or assignments in online learning could help students strengthen their critical thinking abilities. They could utilize their problem-solving skills to innovate their task. They may use their knowledge and experience to create a superior product. It should be mentioned that giving student teachers greater opportunities could enhance their inventiveness. Overall, the emphasis on transformational online learning enabled instructors to both model critical thinking skills through critical dialogue and provide feedback and opportunities for reflection, allowing students and instructors to co-construct meaning (Mumford & Dikilitaş, 2020).

Table 2. Development of Students' Critical Thinking Disposition in Online Learning

Critical Thinking Dispositions	Indicators (%)			
	Poor	Fair	Good	Excellence
Open-mindedness	4.3	8.6	65.2	21.7
Confidence	0	13.0	52.2	34.8
Perseverance	0	0	74.0	26.0
Autonomy	4.3	13.0	78.3	4.3
Collaboration	0	0	87.0	13.0

Table 2 displays the critical thinking disposition of pupils. Collaboration significantly impacts the development of critical thinking in English student teachers. The majority of students rated their collaboration abilities as either good or excellent. In addition, online learning offers English student teachers with a positive (74%) and wonderful attitude (26%). By assigning tasks in groups, students can develop a strong interest in reading and enhance their capacity for critical thought. However, some pupils still rely on their other buddies (17.3%). When working on group tasks and encountering difficulties, they prefer to seek their buddies for help, which negatively impacts their open-mindedness. When the lecturer has asked them to practice their learning media through peer teaching, 34.8% of English student teachers have a high level of self-confidence.

The results suggest that the influence of teacher views on online learning resulted in favorable outcomes for English student teachers. It is considered that when teachers provide a better and more suitable atmosphere for students to engage in reflective thought and assessment of critical thinking activities, they can encourage students to adopt a critical thinking attitude toward online learning (Rahimi & Soryani, 2014). Cooperative, problem-based, and project-based learning were successfully implemented during online learning, demonstrating the efficacy of social constructivist-based teaching methodologies for cultivating critical thinking disposition (Kusuma et al., 2019).

In fact, the usage of forums in VINESA conversations promotes open-mindedness and empathy among students. The use of project-based learning in online education encourages users to engage in critical debate and examine different perspectives by encouraging them to ask questions (Junisbayeva, 2020). During online learning, lecturers successfully transfer their learning perspective that improves students' critical thinking abilities and disposition on their ability to encourage cognitive, affective, and behavioral change in an online classroom.

## CONCLUSION

This research implies that teachers must acquire and cultivate an online environment favorable to the development of students' critical thinking abilities and disposition. The teachers' interest in and expertise with the topic of information they are transferring to their pupils are crucial to the formation of critical thinking concepts. In online learning, the instructor should provide a framework for educating students with the methods and experiences necessary for their personal and professional development as critical thinkers and prospective teachers. English student teachers displayed their critical thinking abilities and attitudes during online learning. It also shows that critical thinking skills and dispositions can be taught successfully to English teacher students in an online situation. It is advised that additional studies focus on academic achievement scores and the use of testing to evaluate school performance to determine the efficacy of critical thinking abilities, as encouraging critical thinking is a wise investment.

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