

# The Evaluation of Higher-Order Thinking Skills in Blended Learning Discussion at University Level

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*Abstract-As complete learning, discussion in blended learning also requires an evaluation for students' higher-order thinking skills to find out how the concept works out. Further, discussions in the blended learning environment combine face to face and online learning. The purpose of this study is to evaluate the students' higher-order thinking skills in such an environment. This research is survey research in E-Learning Development class at the Educational Technology study program (N = 45). Blended learning discussion activities are assessed using instruments in the form of face-to-face discussion assessment sheets and online discussion assessment sheets. The data are then analyzed using a descriptive method. The result shows that the quality of the discussion is good overall. It is concluded that the improvement of students' higher-order thinking skills in a blended learning environment depends on the spot assessment done instantly, quickly and precisely. Thus, it is very important to consider an integrated assessment between class discussions and online discussions in blended learning.*

*Keyword: Blended Learning, Higher Order Thinking Skills, Discussion Standarts.*

## I. INTRODUCTION

For the last few years, blended learning has become an important part of a learning experience in higher education level. Higher education institutions also increasingly facilitate online learning or blended learning by including various online learning activities, such as online discussions, interactive case studies, quizzes, assignments, portfolios, and various other features. Padang State University (UNP) is one of the higher education institutions that has also adopted and provided facilities for the implementation of blended learning.

One of the methods used in the learning process at the university level is a discussion. This method has also been recognized as a major component of learning in universities (Ellis & Goodyear, 2013; Lyon & Lagowski, 2008; Rovai, 2007). The implementation of the discussion method can not only be conducted in face-to-face meetings. However, it can also be implemented in an online learning system. The features available in the Learning Management System of e-learning to support the implementation of online discussions are chat and forums. Chat is used for synchronous online discussions, while forums are a facility for asynchronous online discussion.

Furthermore, the discussion method tends to be used in universities because it can develop Higher Order Thinking Skills (HOTS). The students with an educational track record of certain age groups are assumed to have initial experience and knowledge that can be constructed through a process of discussion (Slavin & Davis, 2006). The process of developing new knowledge from the existed knowledge and experience is supported by the skills possessed by the students, namely Higher Order Thinking Skills. This skill is a part of other skills (Collins, 2014; Husamah, 2018) and can be assessed through face-to-face discussion and online discussions. As complete learning, discussion in blended learning also requires an evaluation for students' higher-order thinking skills because evaluation is an important part of the education system.

Discussions in the blended learning environment also combine discussion modes, such as face to face with online learning (Bersin, 2004; Kaur, 2013; Watson, 2008). Regardless of when, who, and where the evaluation is conducted, the results will be in line with the process followed (Koç, Liu, & Wachira, 2015). Moreover, HOTS assessments on online discussions are more flexible in terms of time because it usually provides one-week assessment, while face-to-face meetings are limited in the term of time and classrooms. Therefore, it is necessary to evaluate the ability of the students' higher-order thinking skills in blended learning discussions to find out how this method works out.

II. RESEARCH METHOD

This research is survey research in E-Learning Development class discussion at the Educational Technology study program (N = 45). The research procedure began with discussions in the classroom environment regarding the topic given at a particular meeting. When the discussion took place, the lecturer assessed the students using face-to-face discussion assessment sheets. Then, the lecturer confirmed the results of the discussion at the end of the lesson. Next, the lecturer instructed to continue the online discussion by giving a case to be resolved and discussed at the Learning Management System for one week.

During that week, the lecturer conducted online discussions assessment using an online discussion assessment sheet. The discussion activities both face to face and online for eight meetings were assessed using instruments in the form of discussion assessment sheets. This instrument showed the quality of the discussion by assessing six aspects, as coherent conceptions, fragmented conceptions, deep approaches to face discussions, deep approaches to online discussions, surface approaches to face to face discussions, and surface approaches to online discussions. The range scale of this discussion used the Likert scale, with grades 1-5. The data were then analyzed by descriptive techniques to assess the quality of students' higher-order thinking skills in a blended learning environment.

III. RESULT AND DISCUSSION

The result of the study is presented descriptively in table 1

Table 1. The Data of Discussion Quality

Variable	N	Meeting	Average	
			face-to-face discussions	online discussion
Coherent conceptions of discussions	45	8 meetings	3.20	3.25
Fragmented conceptions of discussions	45	8 meetings	3.00	3.00
Deep approaches of discussions	45	8 meetings	2.90	3.15
Surface approaches of discussions	45	8 meetings	3.00	3.56

The data presented in table 1 showed that the quality of the discussion was good overall. This result was supported by the fact that the overall average rating of 45 students who took part in the discussion for 8 meetings getting a score of 3.20 from a range of grades 1-5. Meanwhile, on some variables, the grade of discussion was quite different. It showed that the quality of online discussions was higher than in face-to-face discussions. This finding was an interesting thing to explore. In reality, some students were reluctant to comment in class because of lack of confidence due to the ability to communicate in public, the use of languages that influenced by regional languages, lack of references, and the opportunity to express ideas due to time constraints. The students who had a limit chance at this face-to-face meeting conveyed their ideas through online discussions. They acknowledged that online discussions were more flexible because they could use references before taking part in the discussion. On the other hand, other students revealed that they were free to discuss in LMS because they felt confident without thinking about other people judgments and the different languages they had. According to the researchers, this matter also influenced the result of deep approaches to online education was higher than the class discussions because they could use references when expressing opinions. Further, surface approaches in the online discussion were getting higher compared to face to face due to the limited time of discussion in class. It concluded that LMS provided flexible learning since it used discussion forums.

Blended learning combined face-to-face meetings with online learning (Bersin, 2004; Graham, 2006; Smaldino, Lowther, Russell, & Mims, 2008). This combination could facilitate the development of students' higher-order thinking skills. It was a good option because it took two best sides of learning by taking advantage of face-to-face and online meetings. However, face-to-face learning had the value of transmitting knowledge that cannot be done through online learning. This face-to-face learning was also functioned as a stage of controlling or monitoring the independent and online activities. Besides, online learning contributed to flexible, easy access, and a familiar learning environment with student needs.

#### IV. Conclusion

Blended learning combines the best side of face-to-face discussion in class with online discussions as an effort to develop HOTS. The success of the blended learning environment for developing the students' HOTS quality depends on the spot assessment done instantly, quickly and precisely. Thus, it is very important to consider an integrated assessment of class discussions and online discussions. In fact, the discussion quality is not limited to the students' presence in these activities, both offline and online, but it is more important to assess the content delivered. Therefore, it is necessary to prepare a rubric for blended learning discussions assessment in tertiary institutions which includes evaluation criteria for online and offline discussion and evaluation according to the criteria of teaching content and material.

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