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The Effect of Asynchronous Blended Problem-Based Learning on the Critical Thinking Abilities of Undergraduate Midwifery Study Program Students

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Abstract

Asynchronous blended problem-based learning (ABLE-PBL) is a problem-based learning (PBL) learning innovation that can be used in midwifery educational institutions that have a limited number of teaching staff but still want to optimize the learning process and produce competent quality graduates by community needs. The research aims to determine the relationship between asynchronous blended problem-based learning and the critical thinking abilities of undergraduate Midwifery students at Muhammadiyah University of Sidoarjo. Quantitative research method using a cross-sectional approach. The research population was undergraduate midwifery students at Muhammadiyah University of Sidoarjo with a sample size of 37 students. The sampling technique used total sampling and data was analyzed using the Person Chi Square technique. The results of the research show that the implementation of asynchronous blended problem-based learning is categorized as good at 70.3%. Students' critical thinking abilities are in the high category, namely 67.7% and based on the Person Chi-Square test p-value <0.05. The research concludes that there is a relationship between asynchronous blended problem-based learning and the critical thinking abilities of undergraduate Midwifery study program students.

Keywords : *asynchronous, blended, problem-based learning, midwifery.*

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Introduction

Currently, midwifery education in Indonesia is experiencing various challenges in producing quality graduates who are competent in their field. Midwifery graduates are required to become competent midwives to master soft skills and hard skills in providing midwifery care services in the community (Apriliani, 2019). Currently, the learning method that is still widely practised is the lecture method with a form of one-way communication with the lecturer as the learning centre (De Jong N, 2018). In the lecture method, students often become passive and just listen to the lecturer delivering the material. The educational process in this method focuses too much on what is delivered, compared to the students' own needs for the material.

The lecturer-centred learning pattern as currently practiced needs to change because it is inadequate to produce competent graduates (Muhfahroyin, 2005). The learning method needed is a method that can stimulate critical thinking, analysis and self-learning in midwifery students as well as increase students' understanding of learning material so that the knowledge possessed by students is the result of the students' construction (Apriliani, 2019. In implementing KBK, lecturers are placed as enablers or intermediaries to help and motivate students so that the outlined course

competencies can be achieved by students at the end of their learning (Khoiriyah, U. 2008). Problem-based learning (PBL) is an effective learning method in stimulating students' learning processes in solving problems that occur in real life because students will play an active role in efforts to solve the problems raised in this method (Bruce, 2002). For universities with a limited number of teaching staff, this method is difficult to implement because, in its implementation, this method requires a large number of educators. Using appropriate learning methods can increase student participation, motivation and understanding of learning material. Research from Pujadi shows that educational institutions, including midwifery, must use appropriate learning methods to produce quality graduates (Hutasoit, 2018).

Blended learning is a method that combines internet-based learning with face-to-face methods. This method is implemented systematically to support and improve interaction between students, educators and learning resources (Bruce, 2002). This method can create a more flexible teaching and learning process by using the principles of adult learning and responsibility, and the use of this method has proven to be able to overcome the problems of distance and time limitations so that students give a positive perception of this method. The better the students' perception of the learning process, the more their learning motivation will increase making the learning process more effective and providing better learning outcomes (Hutasoit, 2018).

One form of communication used in blended learning is asynchronous communication. Asynchronous online forums help the student learning process and are more flexible because they can be done when students and lecturers are not there at the same time. Based on this, it is hoped that combining the asynchronous Blended Learning method with the Problem-Based Learning approach in midwifery education can overcome the limited number of teaching staff but still optimize the learning process (Tiwari, 2016). In general, the factors that influence learning process activities can be divided into two main categories, namely factors that come from within and factors that come from the external environment. These two factors, in this case, internal and external, both influence and complement each other in the process of individual formation, thereby determining the quality of learning outcomes (Imelda, 2016). Student internal factors include physiological aspects and psychological/psychiatric aspects. Physiological aspects include general physical condition and tone (muscle strength), which indicates the level of fitness of the body's organs and joints, which can influence students' enthusiasm and intensity in taking lessons.

Psychological aspects include psychological aspects that can influence the quantity and quality of student learning, including student intelligence, student attitudes, student talents, student interests and student motivation (Khoiriyah, 2008). Apart from student characteristics or internal factors, external factors influence the teaching and learning process, such as the learning methods used by teachers in teaching. Apart from that, the most important element in learning activities is the teacher, in this case, the lecturer (Muhfahroyin, 2005). A teacher/lecturer in delivering learning material must first choose which method is appropriate to the circumstances or conditions of the class so that students feel interested and can optimally follow the lesson being taught. a new

learning method that can specifically and carefully monitor progress in achieving learning objectives and develop critical thinking skills (Muhfahroyin, 2005).

Critical thinking skills are important things that every person needs for their life. Therefore, critical thinking skills are very important for students to learn in college (Khoiriyah, 2008). The thinking ability that everyone needs is high-level thinking ability, which consists of critical thinking and creative thinking. Critical thinking in question is reasonable and reflective thinking that focuses on deciding what to believe or do. Duldt-Battey BW., 1997; Phillips V., Bond C., 2004 revealed that critical thinking has become one of the competencies of higher education goals in many countries. This research aims to determine the effect of learning using Asynchronous Blended Problem-Based Learning (ABLE PBL) on critical thinking skills in undergraduate Midwifery students.

Methods

This research is a quantitative research with a correlative research design and uses a cross sectional approach. The dependent variable for the research is asynchronous blended problem based learning and the independent variable is knowledge. The population of this study were midwifery students at the Bachelor of Midwifery University of Muhammadiyah Sidoarjo with a sample size of 37 students who met the inclusion criteria and did not meet the exclusion criteria.

The sampling technique uses a total sampling technique and samples are taken from the entire population, namely all midwifery students who have taken part in the learning process using the Asynchronous Blended Problem-Based Learning (ABLE PBL) learning method. The instruments used in this research were observations and questionnaires. The questionnaire instrument in this research is in the form of a statement accompanied by the respondent's answer choices. This questionnaire is used to determine the level of critical thinking abilities of undergraduate Midwifery students.

In the learning implementation variable, data is grouped based on alternative answers. Next, scoring is carried out using scoring criteria using a scale that provides 2 alternative answers and for the student critical thinking ability variable using a Likert scale using 3 assessment categories. The data processing that will be used is univariate analysis which aims to explain or describe the research variables, in this case, the level of students' critical thinking abilities. So percentage analysis is used where the data is divided into several groups and expressed and measured in a presentation. Data are presented in the form of frequency distribution tables and percentages. Bivariate analysis uses cross tables to highlight and analyze differences or relationships between two variables. In this analysis, the data was carried out statistically using the Spearman correlation test and using SPSS.

Results and Discussion

Based on the research that has been carried out, the results obtained are:

Table 1. Frequency Distribution of Implementation of Asynchronous Blended Problem Based Learning

No	Category	Frequency	Percentage (%)
1.	Good	26	70.3
2.	Enough	11	29.7
	Total	37	100

Source of table data reference: primary data.

Based on table 1 above, states that the implementation of the asynchronous blended problem based learning method is in a good category, namely 70.3% (26 respondents). This shows that the implementation of the asynchronous blended problem based learning method by the lecturer based on student assessments is good, which indicates that the lecturer has paid attention to aspects such as facilitation skills, skills in introducing problem-solving and thinking critically to groups, skills in introducing efficient group functions, skills in introducing individual learning and skills in evaluating students and coordinating student evaluations (Hutasoit, 2018).

The skill dimension in introducing problem-solving and critical thinking to groups is the lecturer's effort to lead students to examine a range of phenomena from the smallest to the largest aspects, assess or criticize evidence that strengthens hypotheses determine issues and synthesize information. This is one of the things that encourages students to learn actively, independently, and innovatively and develop their critical thinking skills (World Health Organization, 2016).

Table 2. Frequency Distribution of Students' Critical Thinking Ability Using Asynchronous Blended Problem-Based Learning.

No	Category	Frequency	Percentage (%)
1.	High	25	67.7
2.	Medium	9	24.3
3.	Low	3	8.1
	Total	37	100

Source of table data reference: primary data.

Based on table 2, it states that the critical thinking abilities of students who use asynchronous blended problem based learning are in the high category, namely 67.7% (25 respondents). This shows that students' critical thinking skills are good, which indicates that students in implementing learning have understood and applied aspects related to the concept of critical thinking such as providing simple explanations, building basic skills, concluding, providing further explanations and organizing strategies and tactics.

Students' critical thinking abilities are in the high category, indicating the dimension of drawing high conclusions which includes deducing and considering the results of deductions and considering the results of induction, making and determining the value of considerations that are high. Duldt-Battey et al., revealed that critical

thinking has become one of the competencies of higher education goals in many countries. The same opinion by Bassham et al., revealed that during education, critical thinking can help students improve their understanding of the material being studied by critically evaluating arguments in textbooks, journals, and discussion partners, including lecturers' arguments in lectures.

In the opinion of Marzano et al., in the thinking process, there are events of analyzing, criticizing and reaching conclusions based on inference or careful consideration. Critical thinking skills can be empowered by understanding aspects related to the concept of critical thinking. Thinking is said to make sense if the thinker tries to analyze arguments carefully, looks for valid evidence and reaches logical conclusions.

Nothedge's opinion is that to empower critical thinking skills, basic skills are needed, including choosing reliable sources of information. Selecting information and evaluating information critically are the most important skills because they will support problem-solving and making decisions. However, providing further explanations and arranging strategies and tactics also need to be considered to be able to define assumptions and determine actions carefully.

Tabel 3. The relationship between asynchronous blended problem based learning and the critical thinking abilities of undergraduate midwifery students.

Knowledge	Critical Thinking Abilities						Total		95% CI	P-value
	High		Medium		Low					
	n	%	n	%	n	%	n	%		
Enough	3	27.3	5	45.5	3	27.3	11	100	3.103 (1.166-8.257)	0.001
Good	22	84.6	4	15.4	0	0	26	100		

Source of table data reference: primary data.

Based on table 3 shows that the higher critical thinking abilities of undergraduate Midwifery students mostly have good knowledge (84.6%) compared to sufficient knowledge (27.3%). Moderate critical thinking ability is more common with sufficient knowledge (45.5%) and low critical thinking ability is more common with sufficient knowledge (27.3%). The results of the Chi-Square test show that there is a correlation so it can be seen that the higher the implementation of asynchronous blended problem based learning, the higher the students' critical thinking abilities (p-value <0.05).

Penelitian ini didukung dengan hasil penelitian yang dilaksanakan oleh Tiwari A et al., yang menyatakan bahwa terdapat perbedaan yang signifikan dalam pengembangan sikap berpikir kritis mahasiswa yang melakukan program Problem Based Learning dan kuliah ceramah. Mahasiswa PBL menunjukkan peningkatan signifikan lebih besar pada kemampuan mencari kebenaran, kemampuan analisis dan kemampuan berpikir kritis serta percaya diri.

Apart from that, Hutasoit's (2018) research shows that the Asynchronous Blended Problem-Based Learning method has an effect on knowledge 8,838 times and learning

activities by 9,595 times. According to Hutasoit, the Asynchronous Blended Problem-Based Learning method has an effect on increasing knowledge, one of the factors in the learning process are case scenarios, independent learning and feedback.

Factors that influence the effectiveness of the Asynchronous Blended Problem Based Learning and Problem-Based Learning methods include the learning process, Asynchronous Blended Problem Based Learning method training and manual books, case scenarios and guide questions, concept maps, feedback, and Asynchronous Blended Problem Based applications Learning. The learning process in the Asynchronous Blended Problem Based Learning method and the Problem-Based Learning method forms an affective system (case scenarios) and working memory (discussion, independent learning, feedback) as well as forming a metacognitive thinking process.

Conclusion.

Asynchronous Blended Problem-Based Learning has a relationship with critical thinking abilities in Bachelor of Midwifery students.

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