# A Development of Student-Centered Learning With Problem-Based Learning
# Through Blended Learning in 3.B Block (Normal Delivery Care)

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**ABSTRACT**

In 3.B Block students will learn the concepts, changes and mechanisms of normal delivery, to documentation of midwifery care in normal delivery and newborns. Thus mastery of the material in 3.B Block is important, because it will provide provisions for students in providing midwifery care to mothers in labor. There is need for the right learning methods that can support learning achievements. The learning method developed in this study is Blended Learning. The subject of this study was the third semester student in the 2021/2022 academic year in Undergraduate Midwifery Program Faculty of Medicine Andalas University . This study compares the development of student scores from the first meeting to the fourth meeting of the tutorial. Data collection tools using assessment sheets and written tests. The results showed that the blended learning model could improve students' creative thinking skills. This can be seen from the increase in the average value of students' creative thinking abilities from 79,24 at the fisrt meeting to 84,69 at the fourth meeting. This study also showed the increased value of the pre-test and post-test scores of students, where there is the largest increase in the value of 75-79 from 12.12 to 30.3 percent.

*Keywords: Student- Centered Learning, Problem Based- Learning, Blended-Learning*

## 1. INTRODUCTION

3.B Block is the second block that must be studied by third semester students in the Undergraduate Midwifery Program Faculty of Medicine Andalas University. In this block students will learn the basic concepts of childbirth, care for childbirth from the 1st to the 4th stage, and newborns. Students who entered 3.B block previously must have passed the previous courses, namely 1.A Block (Introduction to Midwifery Education), 1.B Block (Biomedic 1), 1C Block (Biomedicine 2), 2.A Block (Midwifery Concepts), 2.B Block (Basic Pathology and Pharmacology). ), 2.C Block (Adolescent Health and Pre-conception), 3.A Block (Midwifery Care for Pregnant Women).

Thus mastery of the material in 3.B Block is important, because it will provide provisions for students in providing midwifery care to mothers in labor. There is need for the right learning methods that can support learning achievements. The learning method developed in this study is Blended Learning. Blended learning provides flexibility for lecturers and students in carrying out lectures so that it is expected to have a good effect on student learning outcomes. It is undeniable that students sometimes feel bored during learning. while Lecturers are required to practice innovative and fun learning methods for students. Therefore, blended learning is very suitable to be applied coupled with the reason for the pandemic.

Blended learning activities in block 3b are tutorials, introductory lectures, clinical skills, topic discussions, and plenary discussions. Blended Learning combines face-to-face learning and online learning. In 3.B block plenary discussions, tutorials, topic discussions and introductory lectures are carried out online, while clinical skills are limited to face-to-face. An example of a Student Center Learning method with Problem Based Learning through blended learning is tutorial. In tutorials, lecturers not only explain information but also become motivators, facilitators and innovators for

students. In addition, teachers also help students in problem solving and become their mentors in independent study.

This block is implemented for 5 weeks. Every week students will discuss 1 module and the final block evaluation will be carried out in the sixth week in the form of a CBT exam.

## 2. RESEARCH METHOD AND DEVELOPMENT OF LEARNING METHOD

The subject of this study was the third semester student of Undergraduate Program of Midwifery, Faculty of Medicine, Andalas University in the 2021/2022 academic year. This research uses quasi-experimental with pretest posttest control group design.

### 2.1. Development of Problem-Based Learning Methods (PBL)

PBL is a student center learning (SCL) learning method that is more directed and structured [1]. The scope of PBL learning is more focused based on certain learning objectives in the curriculum. In PBL students must complete the achievement of their learning objectives within the time frame determined by the educational institution. The achievement of learning objectives can be influenced by the results of the information. The information obtained will be discussed to improve the knowledge that has been obtained. [2].

Not only as solving problems, PBL can be used by students to gain knowledge and understanding, and several other software skills such as communication, independence, and responsibility for learning, sharing information and respecting others [3]. there are 5 principles of learning activities using blended learning [4]:

1. Direct learning (live event)
   Direct learning is learning that is carried out face to face between instructors and students
2. Self learning
   This aspect allows students to study in more flexible time and place and according to their needs and abilities.
3. Collaboration
   Collaboration between instructors and students, or students with other students. Collaboration can be a packaged through learning tools provided in facilities such as chat rooms, sharing, and so on.
4. Assessment of learning outcomes
   Every learning process needs an assessment to find out whether the learning has or has not reached the goal, so that the assessment is an important aspect in the learning process.

### 2.1.1. Planning

Some planning procedure are :

1. Lecturers identify, define, and classify learning objectives that will be discussed in each PBL learning session.
2. To encourage students to find lesson objectives, the lecturer provides appropriate scenarios. The scenarios given are in the form of cases, film fragments, pictures, news footage and others.
3. The lecturer estimates the schedule for the first and second PBL tutorials. It is expected that the amount of independent study time needed is sufficient to achieve all the learning objectives that have been set.
4. The lecturer prepares a rubric for evaluating student activities during the tutorial process which consists of attendance, creativity, relevance, attitudes and other assessment points that are deemed necessary.
5. A tutor will facilitate 1 group of 5-10 students. PBL tutors may be from outside the related field discussed in the scenario. PBL tutors perform the following roles:
   a. Help PBL group leaders maintain group dynamics.
   b. Ensuring the group is able to complete the learning objectives that have been set.
   c. Ensure that all students have done their assignments correctly.
   d. Helps suggest a format for presentations of independent learning outcomes that is appropriate for group members.
   e. Lecturers encourage students to gain an understanding of the material. Students can ask questions, explain the material in their own words, make pictures and schematics.
   f. Give feedback to students about their participation in the tutorial process and about achieving learning objectives.

### 2.2. Implementation

The implementation of this study follows the stages of classroom action research where the implementation consists of four steps : planning, implementation, observation, and reflection. This research was conducted at Undergraduate Program of Midwifery, Faculty of Medicine, Andalas University. The PBL model applied is a tutorial. The tutorial is carried out in 7 steps in two meetings that take place in

1 week. Each week students will be given 1 scenario that has been included in the student guide book. The steps for implementing PBL are as follows:

1. To facilitate group discussions, students are given the freedom to choose their seats.
2. In the discussion the group leader is selected as the moderator, two students to take notes on the blackboard or flip chart and working papers. Each student plays a role in each weekly scenario.
3. At the beginning of the session, one student reads the scenario to all members. Students may be asked to take a clinical history or identify abnormal physical signs before the group enters the tutorial room if the scenario is a real patient in the clinic.

The stages of seven jumps are:

1. Clarifying unfamiliar terms : Find and identify foreign terms encountered in the scenario, these terms are recorded in a note to be discussed in the discussion.
2. Problem Definition : Students define the problem to be discussed. Any different issues raised by students should be considered and recorded by the scribe.
3. Brainstorming : In this session, problems that have been agreed upon by students will be discussed in advance. Students put forward the hypothesis of each problem that has been determined by using the knowledge they have previously. Students work together using their knowledge and identify areas of knowledge that are not yet clear or are still unclear. The scribe records all the results of the discussion.
4. Analyzing the problem : Students review the discussion in steps 2 and 3. Students present an explanation that becomes a tentative solution described in the form of a schema.
5. Formulating learning issues : The group finds the core of the learning objectives. The tutor's job is to ensure that learning objectives are achieved, appropriate, focused and comprehensive.

6. Self study : Each student searches for and collects information that related to learning objectives. In order to achieve learning objectives, tutors provide sufficient time for students to carry out independent learning outside of tutorial activities.
7. Reporting: The group discussion was carried out again on the second day of the tutorial. Students share and discuss their self-study results. The tutor will evaluate the learning objectives.

### 2.3. Development of Student Assessment

The data collection tool uses an assessment sheet using a written test. Written tests were carried out before and after the action. For process assessment, use the tutorial assessment form sheet.

## 3. RESULT AND DISCUSSION

This study compares the average score of students in the tutorial process in the first week (first meeting) with the second week (fourth meeting).
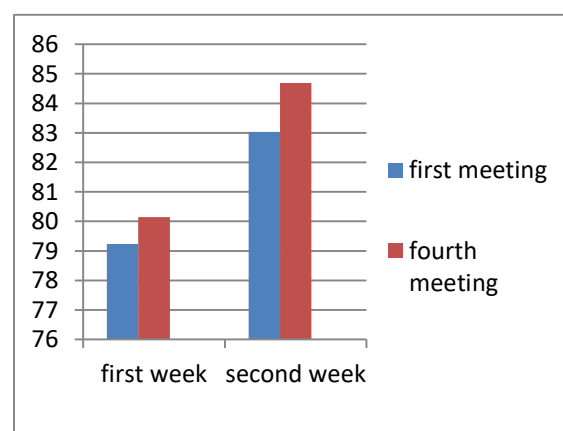


**Figure 1** Comparison of student average scores

There was an increase in the average value from the first week to the second week of the meeting.

**Table 1.** the avarage value of student knowledge

| Value range | First week | | Second week | |
|---|---|---|---|---|
| | f | % | f | % |
| 85 – 100 | 9 | 27 | 24 | 72 |
| 80 – 84 | 17 | 51 | 8 | 24 |
| 75 – 79 | 0 | 0 | 0 | 0 |
| 70 – 74 | 7 | 21 | 1 | 0,3 |
| 65 – 69 | 0 | 0 | 0 | 0 |
| 60 – 64 | 0 | 0 | 0 | 0 |
| 55 – 59 | 0 | 0 | 0 | 0 |
| 50 – 54 | 0 | 0 | 0 | 0 |

Based on the table above, it can be seen that the average value of students has increased every week. In addition to looking at the development of scores from the first week, this study also looked at the students' pre-test and post-test scores as follows:

**Table 2.** Comparison of pre-test and post-test scores of students

| Value range | Pre test | | Post test | |
|---|---|---|---|---|
| | f | % | f | % |
| 85 – 100 | 1 | 3 | 1 | 3 |
| 80 – 84 | 0 | 0 | 4 | 12,12 |
| 75 – 79 | 4 | 12,12 | 10 | 30,30 |
| 70 – 74 | 4 | 12.12 | 8 | 24,24 |
| 65 – 69 | 6 | 18,18 | 7 | 21,21 |
| 60 – 64 | 9 | 27,27 | 2 | 6 |
| 55 – 59 | 6 | 18,18 | 1 | 3 |
| 50 – 54 | 3 | 9 | 0 | 0 |

The results showed that most of the students' pre-test scores were in the range of values between 60-64, (27.27%). Then a post test was carried out and the results showed that the majority of students had a score range of 75-79 (30.30%).

The Student Center Learning (STL) learning method with a problem based learning (PBL) approach through blended learning uses several methods including tutorials, plenary sessions, topic discussions, independent learning, practicum and several introductory lectures. The face-to-face process is carried out on clinical skills and practical activities. While tutorial activities, topic discussions, plenary discussions

and introductory lectures are carried out online. All these activities use the Ilearn application which has been facilitated by the university.

Ilearn can be accessed during learning for students and lecturers who already have an account. The lecturer concerned can upload materials for students to access. Through their ilearn accounts, students can also access 3.B block guidebooks, scenarios for tutorials, and teaching materials in introductory lectures by each lecturer who gives lectures. The teaching materials can be in the form of modules, videos or podcasts so that they are more interesting for students and can be accessed from each place without having to meet face to face. This is expected to improve the quality of learning and student output, especially in 3.BBlock.

Along with the development of technology, humans are required to be able to think creatively in terms of creating innovations in all areas of life. Thus, creative thinking is one aspect of high order thinking skills that need to be instilled in students' minds to create good innovations in all fields.

This is in accordance with the opinion of Graham (2004) indicating that blended learning as an alternative solution to solve the learning gap is currently more focused on face-to-face learning or only online learning. This perspective reveals about the online learning experience, but it is basically not just an online experience [5]. Blended Learning can stimulate skills, give creative attitudes to be able to carry out learning activities independently, where learning activities do not depend on the instructor, so learning with blended learning is integrated to provide convenience and build independent attitudes for students to be creative and innovative in carrying out learning activities [6].

This is in line with the results of Lutfiasari's research (2016), which states that there is an effect of using problem-based learning methods on students' partograph filling skills. This confirms that the PBL learning method can be an alternative learning course for Midwifery and Newborn Care courses [7].

Renityas (2015), states that problem-based learning through blended learning is effective in increasing student learning participation [8]. The PBL model has a better learning participation rate than class group discussions. There was a significant difference between student participation in learning using the problem based learning model and class group discussions in maternity midwifery lectures with different test results (p = 0.014).

In addition to the above advantages, the learning outcomes of students participating in blended learning are higher than those of students participating in direct learning [9]. Students who get PBL learning

with blended learning are superior in independence. Increasing student independence is very important in improving learning outcomes.

Annisa (2017) states that learning using the blended learning method is proven to increase student learning creativity in P3IPA lectures at the University of Yogyakarta. The results of this study indicate that the blended learning model can improve students' creative thinking skills. This can be seen from the increase in the average value of students' creative thinking abilities from C+ (enough) to A (very good) [10].

## 4. CONCLUSSION

It can be concluded that the PBL learning method with blended learning has a good effect in increasing creativity and also the value of student learning in the 3.B block. In the assessment before and after the action, obtained an increase in the value of knowledge between before and after treatment.

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