

Effectiveness of Strategic Learning to Improve Learning Outcomes

Wahyu Kirana¹, Hartati Muchtar², Moch. Sukardjo³

^{1,2,3}Educational Technology, Universitas Negeri Jakarta, Jl. Pemuda, Jakarta Timur, Indonesia

wahyukirana_tp10s3@mahasiswa.unj.ac.id¹, hartati muchtar@yahoo.co.id², moch.sukardjo@unj.ac.id³

Abstract. The learning outcomes of psychiatric nursing course is still low, it is caused by the difficulties of students to master the subjects of psychiatric nursing which commonly abstract or unclear. The aim of this study is to know the effectiveness of strategic learning to improve learning outcomes. This research uses quasi experimental method with nonequivalent-groups posttest-only design. The result of this research is Ho rejected which is proved by the students learning outcomes of psychiatric nursing who are taught by PBL learning strategy is higher.

Keywords: Learning strategic, PBL, CL, learning outcomes.

1. Introduction

One's success in education is determined by internal and external factors. Internal factors are factors that come from within the individual itself, such as the level of intelligence, intelligence, emotion, psychological state, and others. External factors are factors that come from outside the individual, such as the environment, family environment, community environment, and school environment, educational infrastructure, and learning motivation. The success of learners in learning is shown by learning outcomes. Student learning outcomes are closely related to learning strategies used by educators in classroom learning activities. Learning outcomes are the outcomes that have been achieved by someone who has worked on a learning process. The success of learning is a change in the ability of learning activities that are increased in nature compared with previous capabilities. The success of learning or learning outcomes is the result achieved by someone who has worked on a series of teaching and learning processes or mastery of knowledge and skills that are usually manifested in the form of test.

There are many learning strategies that can be applied to manage good teaching and learning process such as Problem Based Learning (PBL) and Cooperative Learning (CL). PBL, is a learning strategy that uses real problems as a context so that learners can learn to think critically in performing problem solving shown to acquire knowledge or essential concepts from the subject matter. PBL learning strategies with a Student Center Learning approach that is suitable for use in Nursing learning, especially the Psychiatric Nursing course. In addition to achieve learning objectives, the learning strategy produces critical thinking competencies in problem solving, the ability to communicate, express opinions and respect the opinions of others, and be able to cooperate in teams. Cooperative learning (CL) is an instructional approach using small groups where the students work together to maximize their learning. Educators give the information in the same direction to the students and after the educators explain the learning materials, the students will be asked to discuss about the

materials by creating small groups. The information not only obtain from educators but from discussion with their own groups. Competence is an important competence to have by a nurse, especially nurses who will overcome mental health problems. The use of appropriate learning strategies is expected to improve student learning outcomes.

The learning outcomes of subject of Psychiatric Nursing is still classified as low, this is because student's difficulties to master psychiatric nursing material that is considered abstract or unclear. The average value of the Middle Semester Test of the Psychiatric Nursing subjects obtained by students of the fourth semester of academic year 2016/2017, is 52.33 in STIKes Yarsi Pontianak.

The use of learning strategies in some of the lessons of Psychiatric Nursing course still uses a strategy that focuses on how lecturers teach, although the Ners curriculum of AIPNI (Association of Indonesian Ners Education Institutions) has authorized the use of the Student Center Learning approach. The task of educators in this case, to develop appropriate learning strategies so that students can receive and understand the abstract lecture material becomes more real.

Nursing education is expected to answer the challenge to the demands of nurse professionalism, where the educational process seeks to utilize a variety of learning strategies. Based on the phenomenon that has been described above, it is necessary to do research about the effectiveness of strategic learning to improve learning outcomes.

2. Literature Review

2.1. Learning Outcomes

Being, with human learning acquiring skills, abilities so that an attitude is formed and knowledge increases. So learning outcomes are a tangible result achieved by students in an effort to master physical and spiritual skills in school which is realized in the form of report cards in each semester. To know the progress to where the results have been achieved by someone in learning, it must be evaluated. To determine the progress achieved, there must be a criterion (benchmark) that refers to the goals that have been determined so that it can be known how much influence the teaching and learning strategy on student learning success.

Learning outcomes is the achievement of learning achieved by students in the process of teaching and learning activities by bringing a change and the formation of a person's behavior. To state that a learning process can be said to succeed, every teacher has their respective views in line with his philosophy. But to equate perceptions we should be guided by the current curriculum that has been refined, among others, that a teaching and learning process of a learning material is declared successful if the purpose of learning in particular can be achieved.

To find out whether or not a specific learning goal is achieved, the teacher needs to hold a formative test in each of which presents a discussion to students. This formative assessment is to find out how far students have mastered the specific learning goals to be achieved. The function of this study is to provide feedback to teachers in order to improve teaching and learning process and implement remedial programs for students who have not succeeded. Therefore, a teaching and learning process is declared successful if the results meet the specific learning objectives of the material.

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Learning outcomes are statements of what a learner is expected to know, understand and be able to demonstrate after completion of a process of learning. [1] says that: learning outcomes focus on what the student has achieved rather than merely focussing on the content of what has been taught. Cowan says: ...as a term, learning outcome covers the desired outcomes that student expect from participating in any particular program of higher education [2].

Furthermore, [2]. There are multiple reasons for defining a learning outcome of a study program: (1) it shows to students what competencies they are expected to develop during their studies, (2) it shows to future employers what they can expect when they employ a graduate, (3) it shows to teachers what competence development they have to facilitate in their curriculum, (4) it shows to faculties on which dimensions they can measure student achievements in their study programs.

Learning outcomes specify behaviors and clarify what performance you are willing to accept as evidence that the student has achieved the objective [3]. Learning outcome could also be described as the transformation that happened to student as the result of learning progress. Learning outcome is an intact unit in student itself. In terms, learning outcome includes the result that wanted to be achieved by the student from their participation in joining certain learning program.

2.2. *Learning Outcomes on Psychiatric Nursing Courses*

Nurse profession education is a profession that produce professional nurse graduate, who has manner and ability in the nursing field that obtained through implementing education curriculum with variety of learning experience, such as learning experience in the classroom, laboratory, and clinical and field experience which are equipped by learning facilities that can support the goal of learning.

The nursing education program is a nursing higher education that produces skilled nursing graduates, has attitudes and abilities in the field of nursing obtained through the application of an educational curriculum with various forms of learning experience, including classroom, laboratory, clinical and field experience, equipped with learning facilities that support the achievement of learning objectives. Structuring the situation and learning conditions need to be optimized for learners to master the science and tips of nursing, fostering the attitude and ability to perform professional nursing care. To support the situation and conditions of learning, the nursing education should develop a curriculum oriented to science, technology and community needs, described in the form of competence.

The achievement of learning is achieved through studies arranged into courses. The course of psychiatric nursing as one of the subjects that support the achievement of the competence of nursing education graduate, discusses the concept of mental health, mental health problems in the mental health ranges to mental disorders, and emphasis on primary, secondary and tertiary mental health prevention efforts. The target of handling is aimed at the client with the problem of biopsychosocial-spiritual adaptation and mental disorder using nursing process approach through therapeutic communication as well as the mastery of information technology and various modalities therapy. According to [3], the graduate profile of nurse program are: 1) care provider, 2) communicator, 3) educator and health promotor, 4) manager and leader and 5) researcher. The learning experience of the psychiatric nursing course is gained through the experience of lecture study, case review, simulation, role play, individual assignment, and clinical practice aimed at improving students' understanding and clinical skills in providing mental nursing care. Moreover, individual characteristics such as intelligence, cognitive styles, and personality play an important role in learning and instruction

as does the context of learning. Other research findings have shown that individual students' characteristics variables such as motivational orientations, self-esteem and learning approaches are important factors influencing academic achievements [4]. It is essential that teachers continually assess how well students are understanding the material being taught and adjust subsequent instruction to better meet students' needs [5]. Nowadays, nursing education is more likely to be focused on encouraging students who will become nurses to be able to think critically and they are expected to have the ability to solve problems by making decision efficiently. In nursing education, if outcomes are to be the qualifiers that define the curriculum design and ultimately the educational model for graduates, then the phase of defining outcomes within the curriculum is where the curriculum developers will ensure that the outcomes are clearly identified, defined, and integrated with the outcomes of the professional licensing body [6].

[7] also reveal that nursing students' competency is the individual experiences, dynamic process, and positive interactive social and beneficial changes in the equality of one's professional life which causes meta-cognitive abilities, touch reality, motivation, decision making, job involvement, professional authority, self-confidence, knowledge and professional skills, in which are included the five factors of "nursing process," "caring," "professionalism," "communities," and "diversity. Besides, [8] states clinical competence is an important outcome in nursing education. Evaluating clinical eligibility and indicating factors affecting it may be helpful in promoting the quality and effectiveness of nursing education. Refer to [9], in nursing education, an environment should be created where students begin to operationalize a process of thinking that is derived from classroom learning, from practice experiences, and from what they think about when they care for patients.

The mastery of nursing care in variety of behavioral disruption that has been determined as the nurse competence in the AIPNI curriculum (2015), involving the ability to master nursing care to the patients with : 1) the risk of violent behavior, 2) hallucinatory, 3) social isolation, 4) chronic low self-esteem, 5) deficit of self-care, 6) delusion and 7) risk of suicide.

2.3. Problem Based Learning (PBL)

PBL is a cognitive strategy that begins by confronting learners on real, authentic or simulated problems. According to Barell, PBL can be defined as an inquiry that resolves question, curiosities, doubt and uncertainty that invite or needs some kins of resolution [10]. [11]say that as... in PBL, cases and scenarios are used to promote problem solving through group interaction and analysis. The PBL model is one of the learning models born in 1966 in the medical faculty of McMaster University of Canada. Until now Problem Based Learning has spread especially in the world of nursing, construction, engineering, business and education. The PBL model is a learning that begins by confronting learners on a problem. Problem Based Learning focuses more on solving authentic problems such as problems that occur in everyday life [12] According to [13], the characteristics of PBL are 5, namely: (1) the problem must be related to the curriculum, (2) the problem is unstructured, the solution is not single, and the process is gradual, (3) the problem-solving student and the teacher of the facilitator, (4) students are only given guidance to identify problems and are not formulated to solve problems, and (5) authentic performance-based assessments. In contrast to [14], who pointed out that PBL characteristics are 3 points, namely (1) lessons focus on solving problems, (2) responsibility for solving student-centered problems, and (3) teachers supporting the process as students work on problems.

[15], stated: Problem-based courses start with problems rather than with exposition of disciplinary knowledge. They move students towards the acquisition of knowledge and skills

through a staged sequence of problems presented in context, together with associated learning materials and support from teachers. [16] states: "we proposed eight principles from across 11 theories of teaching and learning that can inform how PBL is operationalised in university-based health professional education: 1) Adult learners are independent and self-directed; 2) Adult learners are goal oriented and internally motivated; 3) Learning is most effective when it is applicable to practice; 4) Cognitive processes support learning; 5) Learning is active and requires active engagement; 6) Interaction between learners supports learning; 7) Activation of prior knowledge and experience supports learning; and 8) Elaboration and reflection supports learning. These eight principles provide the foundation for curriculum design recommendations relevant to PBL within university-based education programs. Specifically, our findings suggest that active engagement and interactions should be encouraged, that students should be prompted to activate their prior knowledge and experiences, and that elaboration and reflection on learning is critical."

2.4. Cooperative Learning

Cooperative learning is a learning strategy arranged in small groups by noticing the diversity of the students so that the students learn to work together and solve a problem by social interaction with their peers. It gives them chance to learn something better in the same time and she/he will become the informant. CL becomes a learning model that used to realizing the learning that centered on the students. CL is a strategy to overcome the problems that found to make the students who can not work with others become more active. This learning strategy can use in different subjects and different ages. Cooperative learning is an instructional approach that uses small groups in which students work together to maximize their own and others' learning. Collaborative learning emphasizes teamwork and takes advantage of peer tutoring. Collaborative learning experiences can be added to many teaching units [17].

Furthermore, [18] say that cooperative learning is process driven, i.e. those involved in a social process and have to pay attention to that process in order for them to achieve their desired end point. The aim of cooperative learning strategy are: 1) to enhance academic learning outcome. Despite there are many aims in the cooperative learning method, but the main target is to create the learning process becomes more effective and efficient so that it can increase student learning outcome, 2) to teach students to accept distinctions and diversity. Cooperative learning train the students to give their ideas and think together so that bringing out variety of ideas that have to be concluded for mutual goal. Thereby, there is a dependence between one student and others, 3) to develop social skills. Cooperative learning involves the interaction between students so that it can enhance their social skills.

3. Method

This research use quasi experiment. This research aims to examine the effectiveness of independent variable (PBL and CL strategies) toward dependent variable (learning outcome on psychiatric nursing). This research use nonequivalent posttest only design, by comparing learning outcomes of two groups which has been given different treatments. The first group as the experiment group given problem-based learning strategy, and the second group as the control group given cooperative learning strategy as the treatment. The sample is selected by random sampling technique, with the total of 62 students, divided into 30 as the samples of experimental group and 32 as the control group.

This research is started by preparing the learning device program of psychiatric nursing using PBL and CL learning strategy approach. The instrument that must be prepared is

question to test the competence of the students. The activity in the preparation step is continued with validity and reliability tests.

The activity in research implementation is giving the treatments to the experimental and control groups. The treatment that were given is doing PBL and CL learning strategies in the learning activities in psychiatric nursing. This treatments were given in two different institutions, each of them gave 14 times of treatment. The evaluation is done to assess the learning outcome of psychiatric nursing students who have been given the treatments. It was conducted at the end of the learning. The evaluation tool used to assess the learning outcome of psychiatric nursing course is multiple choice question consisting 36 questions. After the data has been gathered, it analyzed to test data description, analysis requirement and hypothesis.

4. Result

The data of the learning outcomes of the psychiatric nursing course on students who were taught with PBL strategies were the test scores obtained by students after being taught with PBL strategies. Based on the table above, of the 36 multiple choice questions given to students, the highest score was 33 and the lowest score was 18. The average score of the data was 24.37 and variance 16.77. Based on these data can be presented in the table of frequency distribution list:

Table 1. List of frequency distributions of student mental nursing learning outcomes that are taught with PBL strategies

Interval	Frequency
18 -20	7
21 – 23	7
24 - 26	7
27 – 29	5
30 – 32	3
33 - 35	1
Total	30

Based on the list of frequency distribution of student learning outcomes in table 1 above, to clarify the distribution of data on student learning outcomes in psychiatric nursing courses that are taught with PBL learning can be presented in the form of the following histogram:

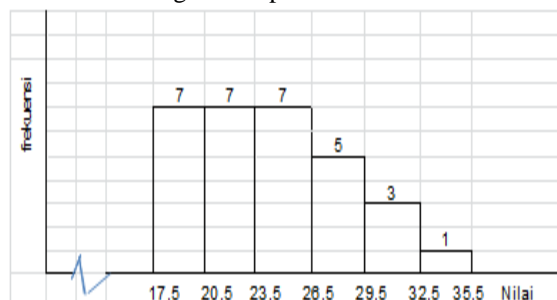


Fig. 1. Histogram Data of Learning Outcomes of Course Psychiatric Nursing Students Who are Taught by PBL Strategis.

Based on the histogram above, it can be seen that the average data of 70% is located at intervals of 18-27. Thus there are 21 students or 70% of the number of students who obtain learning outcomes around the average and there is 1 student or 3.33% who get learning outcomes above average.

The data of the learning outcomes of the psychiatric nursing course on students who were taught with CL strategies were the test scores obtained by students after being taught with CL strategies. Based on the table below, of the 36 multiple choice questions given to students, the highest score was 28 and the lowest score was 18. The average score of the data was 22.53 and variance 7.56. Based on these data can be presented in the table of frequency distribution list:

Table 2. List of frequency distributions of student mental nursing learning outcomes that are taught with CL strategies

Interval	Frequency
18 – 19	6
20 – 21	7
22 – 23	5
24 – 25	9
26 – 27	4
28 - 29	1
Jumlah	32

Based on the list of frequency distribution of student learning outcomes in table 2 above, to clarify the distribution of data on student learning outcomes in psychiatric nursing courses that are taught with CL learning can be presented in the form of the following histogram:

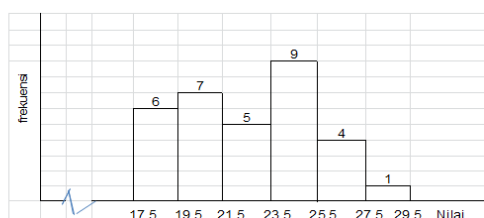


Fig. 2. Histogram Data of Learning Outcomes of Course Psychiatric Nursing Students Who are Taught by CL Strategies

Based on the histogram above, it can be seen that the average data of 28.13% is located at intervals of 24-25-27. Thus there are 9 students at interval 24-25 and 1 student or 3.13% who get learning outcomes above average.

4.1. Normality Test

Normality test using Shapiro Wilk test with the significance level 5%, the significance score that obtained is > 0.05 , 0.380 of experimental group and 0.123 of control group so that the data is normally distributed.

4.2. Hypothesis Test

The hypothesis test uses Independent T Test, with significance level 5%. The significance 2 tailed score is 0.045, so it can be concluded that the students learning outcome

of psychiatric nursing course who were taught by PBL strategy is higher than the students learning outcome who were taught by CL strategy.

5. Discussion

The result of data analysis represented that student learning outcome of psychiatric nursing course who were taught by PBL strategy is higher than students learning outcome who were taught by CL strategy, the PBL score is 23,83 and CL score is 21.84. Thereby, there is an influence using learning strategy toward learning outcome of psychiatric nursing. The distinction of PBL and CL strategies is not so many diverse because both are equal. Besides, the result is obtained by student's test result which the test result will be associated with test questions. It is also stated by Barell, he defines PBL as an investigation that can accomplish question, curiosity, hesitation and uncertainty or something that invite or require some solutions.

Barrows also explained that PBL strategy is a learning strategy based on the principle that problems can be used as a starting point to get or integrate new knowledge. This means that in PBL learning strategies encourage students to know how to learn and work together in groups to find solutions to problems in the real world. By using the PBL approach students do not just receive information from the teacher, because in this case the teacher is a motivator and facilitator who directs students to be actively involved in the entire learning process by starting with problems related to the concepts learned. This is supported by Boud & Fetteli's statement that PBL brings students towards acquiring knowledge and skills through a series of gradual problems presented in context, together with learning material and support from teachers.

The results of Fan-Hao Chou and Chi-Chun Chin's research where PBL can foster critical thinking skills and lifelong learning in students. However, this is a challenge for the faculty of nursing and students, because this method focuses on integrating course content and emphasizing small group interaction. Teachers are the key to changing the curriculum. To understand the barriers and results of new teaching-learning methods, this study explores the perceptions and impacts of nursing nursing in applying PBL to undergraduate programs and nursing programs using qualitative research designs.

PBL is used to stimulate high-level thinking with problem-oriented situations, including learning how to learn. Boud & Fetteli stated that problem-based learning begins with problems and not by exposition of disciplinary knowledge. PBL brings students towards acquiring knowledge and skills through a series of gradual problems presented in context, along with learning material and teacher support. To support the ongoing interaction of students with the environment and / or with themselves, the new knowledge presented should be related to students' initial knowledge so that a meaningful understanding of students is built.

Hers and Sear state that cooperative learning is a learning approach that use small group where students work together to maximize their and others learning. Cooperative learning emphasizes team work and utilizes peer guidance. Collaborative learning experience can be added to variety of teaching units. Collaborative learning seems influencing better when the learning goals involving students analysis toward system problem. While Agarwal and Nagar declare that cooperative learning is encouraged by process, they who involve in social process and need to notice about the process in order to achieve their targets. Cooperative learning provides a chance for students who have different backgrounds and conditions to work dependently because of their tasks and using the structure of cooperative appreciation, learning to respect each other.

This statement is supported by a research of Nayereh Baghelhi et al, with the result finding prove that cooperative learning is an effective method to enhance student's communication skill particularly in interactive skill and follow up sub-scala problem; thus it is recommended to increase the participation of nursing student to communicate their argument by applying active learning method that can provide opportunity to enhance communication skill.

Other relevant research is a research conducted by Hamdan, et al. The research finding indicates a significant distinction of all post and pre test score over three years of learning in nursing using PBL method. The application of PBL method can be more expanded by creative and innovative approach in the process of student learning. Positive experience of PBL method makes nursing education can utilize the value in the planning of teaching and learning activity particularly in nursing education.

6. Conclusion

The students learning outcome of psychiatric nursing course who were taught by PBL strategy is higher than the students learning outcome who were taught by CL strategy.

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