INFLUENCE OF INQUIRY LEARNING MODEL ON LEARNING OUTCOMES OF FAMILY PLANNING SERVICES AND REPRODUCTIVE HEALTH STUDY COURSES FOR MIDWIFERY UNGRADUATE STUDENTS OF ASSOCIATE’S DEGREE EDUCATION

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ABSTRACT

Conventional learning that often used has not been achieved appropriate learning outcomes of students in higher education due to its one-way learning approach confines the access of more knowledge information. In conventional models lecturers more actively dominate learning and college students tend to be passive. One of the innovative, adaptive and creative learning models is inquiry learning. The aim of the present study was to analyze the influence of inquiry learning model on learning outcomes of family planning services and reproductive health study courses for midwifery students of associate’s degree education. The study was a quantitative study using the quasi-experimental design, One-group Design with Non-Equivalent Control Group Design. The locations of the study were conducted at Poltekkes Kemenkes Kendari and Stikes Pelita Ibu Kendari. The data analysis techniques used are Mann-Whitney and Wilcoxon. Learning process variables of lecturers’ activities, students’ activities, lecturers’ characteristics, and students’ responses demonstrated significant differences of learning outcomes between the two learning models. Conventional learning and inquiry learning demonstrated significant influences on the increase of learning outcomes of midwifery students. However, the effectiveness of inquiry learning model was better in comparison to conventional learning model.

Keywords: Learning model, Inquiry, Conventional, Learning outcomes

I. INTRODUCTION

Implementation of teacher-centered instruction in which the teacher controls the content, the activities, the materials, and the pace of learning is traditional learning model is generally associated with passive rather than active learning. This learning model thus far has not been accomplished appropriate learning outcomes and suitable competency of students in higher education. Didactic lecturing method as a common method in learning and teaching process has not been not much assist learning outcomes with a one-way presentation that constrain receiving appropriate information of knowledge to students (D’Antoni et al., 2010). Transmission of knowledge in a one-way approach with teacher-centered instruction leads to inappropriate
learning contents and creative ability of students (Kalyanasundaram et al., 2017). National Training Laboratories reported that the level of comprehensions of students on study course contents by didactic lecturing method was 5%, reading of 10%, audio visual of 20%, demonstration of 30%, and group discussion of 50% respectively (Safriana, 2015).

The Presidents Council of Advisors on Science and Technology (PCAST) released data that the mean failure rate of conventional learning model (55%) was higher compared to the mean failure rate of active learning (33%). Another study also showed that the average failure rate of conventional lecturing was 33.8% and the average failure for active learning model was 21.8% (Freeman et al., 2014).

Developing strategies in leaning activities are needed to enhance understanding of students in the curricula framework of health education with various complicated study courses. Medical Council of India, for instance, has formulated strategies of learning by training paramedical professionals in study courses at all universities using modern and innovative learning models (Kalyanasundaram et al., 2017).

In active learning, the role of instructor in the classroom is moving away from a transmitter of facts (a teacher-centered approach) toward a facilitator of learning experiences, a provider of timely targeted feedback, and a synthesizer of ideas (a student-centered approach) (Kember, 1997 referred to Goodman, 2018). One of the innovative learning models that can create students to think actively and critically is inquiry learning model, a form of instruction in which teachers provide students with information, experiences, or problems that serves as the focus for the students’ research activities. The students generate hypotheses or tentative solutions, gather relevant data, and evaluate the data to arrive at a conclusion. Inquiry learning as an approach in learning provides benefits for students in developing high-level thinking by allowing the students to develop problem-solving strategies and create the initiative to pursue, discover, and evaluate answers, a “transferable capability”, with far-reaching consequences for future learning endeavors (Wang et al. 2015). The implementation of inquiry learning activities is effective in enhancing students’ learning achievement of matter separation as well as their attitudes towards learning science (Supasorn & Lordkan, 2014).

Inquiry-based learning model is a process where students are involved in learning, formulating questions, investigating intensely and building new understanding and knowledge (Yumiati & Noviyanti, 2017). In addition, inquiry-based learning model assists students in searching for information or ideas pertaining to a problem and use it to increase their knowledge (Widiastuti & Santosa, 2014). In other words, inquiry learning model involves students entirely
in learning process in conducting inquiry pertaining to raised problems and finding solutions with their own endeavors (Ulandari et al., 2019).

Learning outcomes in inquiry learning model is better compared to conventional learning model by didactic lecturing where the increase of learning achievement of inquiry learning model is 28.5% in comparison to didactic lecturing is 8.19% with the achievement of learning outcomes 57.71 folds higher compared to conventional learning (Sofiati et al. 2013).

Regarding the importance of inquiry-based learning, midwifery students are necessary to be managed properly in achieving appropriate competencies in conducting their professional duties after graduating their education. A study revealed positive impacts of Inquiry Based Learning (EBL) in praxis of midwifery students. The study show that EBL in midwifery education assists in facilitating the understanding of theory and practice such that increasing praxis of midwifery students. In addition, the majority of midwifery students in Enquiry Based Learning (EBL) has the potential to develop student reflexivity and evidence assimilation across the career-span and may therefore enhance student praxis (Byrne et al., 2018). Adoption of active learning approach has been recommended to alleviate the gap between theory and practice (Crookes et al., 2013).

Regarding the study background as stated above, the authors of the present study intend to assess the influence of inquiry learning model on learning outcomes of family planning services and reproductive health study courses for midwifery students of associate’s degree education.

II. MATERIALS AND METHOD

Locations and Study Design

The present study was conducted at Poltekkes Kemenkes Kendari and Stikes Pelita Ibu Kendari from 30 March 2021 until 6 May 2021. The study used the quasi-experimental design, One-group design with Non-Equivalent Control Group Design. The study design was used to compare learning outcomes between the intervention group (inquiry learning model) and the control group (conventional learning model) derived from tests after instructional activities of all learning contents.

Population and Sample

Populations of the study samples were sophomore midwifery students of associate’s degree education at Poltekkes Kemenkes Kendari and sophomore midwifery students of associate’s degree education at Stikes Pelita Ibu Kendari with a total number of populations
were 170 midwifery students. The study samples were 20 sophomore midwifery students at Poltekkes Kemenkes Kendari in the intervention group and 20 sophomore midwifery students at Stikes Pelita Ibu Kendari. Sampling technique used in the study was simple random sampling.

**Collection Method of the Study Data**

Instruments used to collect the study of data consisted of test instruments and non-test instruments. Test instruments were in the form of questions at pretest and posttest. Non-test instrument consisted of the informed consent, observation sheets of instructors’ and students’ activities in learning activities, observation sheets of lecturers’ characteristics, questionnaires of students’ responses pertaining to the two learning models and questionnaires of learning facilities.

**Data Analysis**

Chi-Square test was used to assess relationship of respondents’ characteristics and their knowledge in the conventional learning model and inquiry learning model. Mann-Whitney U test was used to assess the difference of learning activities (lecturers’ activities, students’ activities, students’ responses, lecturers’ characteristics and learning facilities) between conventional learning model and inquiry learning model. In addition, Wilcoxon test was used to determine the difference of influence of conventional learning model and inquiry learning model on learning outcomes of family planning services and reproductive health study courses of midwifery students.

### III. RESULTS

**A. Univariate Analysis**

1. Respondents’ Characteristics

<table>
<thead>
<tr>
<th>Respondents’ Characteristics</th>
<th>Conventional</th>
<th>Inquiry</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>≤ 19 years</td>
<td>3</td>
<td>15</td>
<td>5</td>
</tr>
<tr>
<td>&gt; 19 years</td>
<td>17</td>
<td>85</td>
<td>15</td>
</tr>
<tr>
<td>Region of origin</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Southeast Province</td>
<td>17</td>
<td>85</td>
<td>20</td>
</tr>
<tr>
<td>Outside of Southeast Province</td>
<td>3</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>Cummulative Grade Point Average (CGPA)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>≥ 3.00</td>
<td>14</td>
<td>70</td>
<td>18</td>
</tr>
<tr>
<td>&lt; 3.00</td>
<td>6</td>
<td>30</td>
<td>2</td>
</tr>
</tbody>
</table>

*Chi-square test; †NSA (No statistical assessment)
Table 1 represents respondents’ characteristics consist of three variables that include age, region of origin and Cumulative Grade Point Average (CGPA). In terms of age, 3 students (15%) with age of ≤ 19 years and 17 students (85%) with age of ≥ 19 years in the conventional learning model group, whereas 5 students (25%) with age of ≤ 19 years and 17 students (85%) with age of ≥ 19 years in the inquiry learning model group with p-value of 0.695>0.05, meaning age variable showed no significant association between the conventional learning model group and the inquiry learning model group. In view of region of origin, 17 students (85%) from Southeast province and 3 students (3%) from outside of Southeast province in the conventional learning model group, whereas 20 students (100%) from outside of Southeast province and no student (0%) from outside of Southeast province in the inquiry learning model group with p-value of 0.231>0.05, meaning region of origin variable showed no significant association between the conventional learning model group and the inquiry learning model group. In view of CGPA, 14 students (70%) with CGPAs of ≥ 3.00 and 6 students (30%) with CGPAs of <3.00 in the conventional learning model group, whereas there were 18 students (90%) with CGPAs of ≥ 3.00 and 2 students (10%) with CGPAs of ≥ 3.00 in the inquiry learning model group with p-value of 0.235>0.05, meaning CGPAs variable showed no significant association between the conventional learning model group and the inquiry learning model group.

2. Learning Process

<table>
<thead>
<tr>
<th>Learning Process</th>
<th>Learning Model</th>
<th>Percentage (%)</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lecturers’ activities</td>
<td>Conventional</td>
<td>87.28</td>
<td>Good</td>
</tr>
<tr>
<td></td>
<td>Inquiry</td>
<td>89.58</td>
<td>Good</td>
</tr>
<tr>
<td>Students’ Activities</td>
<td>Conventional</td>
<td>79.79</td>
<td>Good</td>
</tr>
<tr>
<td></td>
<td>Inquiry</td>
<td>90.03</td>
<td>Good</td>
</tr>
<tr>
<td>Students’ responses</td>
<td>Conventional</td>
<td>68.75</td>
<td>Good</td>
</tr>
<tr>
<td></td>
<td>Inquiry</td>
<td>84.90</td>
<td>Good</td>
</tr>
<tr>
<td>Lecturers’ characteristics</td>
<td>Conventional</td>
<td>87.50</td>
<td>Good</td>
</tr>
<tr>
<td></td>
<td>Inquiry</td>
<td>96.25</td>
<td>Good</td>
</tr>
<tr>
<td>Learning facilities</td>
<td>Conventional</td>
<td>94.50</td>
<td>Good</td>
</tr>
<tr>
<td></td>
<td>Inquiry</td>
<td>95.30</td>
<td>Good</td>
</tr>
</tbody>
</table>

Table 2 represents frequency distributions (%) of lecturers’ activities, students’ activities, students’ responses, lecturers’ characteristics and learning facilities during learning process in the classroom. The percentage of learning process variable in the conventional learning model and inquiry learning model was classified into the “Good” category.
B. Bivariate Analysis

1. The difference of learning process by conventional learning model and inquiry learning model for the midwifery students of associate’s degree education

Table 3. Differences of values of learning process between conventional learning and inquiry learning.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Category</th>
<th>N</th>
<th>Median (Min - Max)</th>
<th>p-value*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lecturers’ activities</td>
<td>Conventional</td>
<td>8</td>
<td>48.5 (46 - 51)</td>
<td>0.001</td>
</tr>
<tr>
<td></td>
<td>Inquiry</td>
<td>8</td>
<td>22 (20-22)</td>
<td></td>
</tr>
<tr>
<td>Students’ activities</td>
<td>Conventional</td>
<td>8</td>
<td>901.5 (834-962)</td>
<td>0.001</td>
</tr>
<tr>
<td></td>
<td>Inquiry</td>
<td>8</td>
<td>1376 (1221-1416)</td>
<td></td>
</tr>
<tr>
<td>Students’ responses</td>
<td>Conventional</td>
<td>20</td>
<td>70.5 (56-76)</td>
<td>0.000</td>
</tr>
<tr>
<td></td>
<td>Inquiry</td>
<td>20</td>
<td>85.5 (76-94)</td>
<td></td>
</tr>
<tr>
<td>Lecturers’ characteristics</td>
<td>Conventional</td>
<td>8</td>
<td>26 (24-28)</td>
<td>0.001</td>
</tr>
<tr>
<td></td>
<td>Inquiry</td>
<td>8</td>
<td>29 (28-30)</td>
<td></td>
</tr>
<tr>
<td>Learning facilities</td>
<td>Conventional</td>
<td>20</td>
<td>92 (76-113)</td>
<td>0.569</td>
</tr>
<tr>
<td></td>
<td>Inquiry</td>
<td>20</td>
<td>94 (88-107)</td>
<td></td>
</tr>
</tbody>
</table>

*Mann-Whitney U test for differences between the groups.

Table 3 represents results of statistical tests of the difference values in learning for the two learning models using the Mann-Whitney U test. The variables of lecturers’ activities and students’ activities showed no significant difference for the two learning model groups with p-value of 0.001 (< α=0.05). The variable of students’ responses demonstrated no significant difference between the two learning model groups with p-value of 0.000 (< α=0.05). The variable of lecturers’ characteristics indicated also significant difference between the two learning model groups with p-value of 0.001 (< α=0.05). There was no significant difference for the variable of learning facilities between the two learning model groups with p-value of 0.569 (> α=0.05).

2. The difference of influence of conventional learning model and inquiry learning model on learning outcomes of midwifery students of associate’s degree education

Table 4. The difference of influence of conventional learning and inquiry learning on learning outcomes of midwifery students of associate’s degree education.

<table>
<thead>
<tr>
<th>Learning Models</th>
<th>Category</th>
<th>N</th>
<th>Median (Min - Max)</th>
<th>Difference</th>
<th>p-value*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conventional</td>
<td>Pretest</td>
<td>20</td>
<td>36.67 (26.67 - 56.67)</td>
<td>36.66</td>
<td>0.000</td>
</tr>
<tr>
<td></td>
<td>Posttest</td>
<td>20</td>
<td>73.33 (60.00 - 90.00)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inquiry</td>
<td>Pretest</td>
<td>20</td>
<td>40.00 (30.00 - 46.67)</td>
<td>40.00</td>
<td>0.000</td>
</tr>
<tr>
<td></td>
<td>Posttest</td>
<td>20</td>
<td>80.00 (73.33 - 93.33)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Wilcoxon test for differences between the groups.
Table 4 shows results of analyses of pretest dan posttest between the two groups of learning models using the Wilcoxon test to assess comparisons of learning outcomes (level of knowledge) between the intervention group (inquiry learning model) and the control group (conventional learning model). The median value of pretest in the control group (conventional learning model) was 36.67 and the median value of posttest in the intervention group (inquiry learning model) was 73.33 respectively. The difference value between pretest and posttest in the control group (conventional learning model) was 36.66 meaning that learning outcomes (level of knowledge) of the students showed an increasing rate with p-value of 0.000 (< α=0.05). Intervention with inquiry learning model showed that the median value of pretest was 40.00 and the median value of posttest was 80.00 and the difference value between pretest dan posttest was 40.00 and indicated the increase of learning outcomes of students with p-value 0.000 (< α=0.05).

Results of analyses of pretest dan posttest for the two learning models demonstrated that each learning model group increased significantly learning outcomes of students.

Graph 1 Comparison of learning outcomes of pretest and posttest in conventional learning model and inquiry learning model.

Graph 1 shows the comparison of results of pretest and posttest for conventional and inquiry learning models to the midwifery students of associate’s degree education. Intervals of values of pretest for the two learning models showed preliminary knowledge of students with the mean value was not quite different between the two learning models within the value interval of 26.00-57.00. The value interval for the two learning models at posttest showed that the minimal value (73.33) and the maximal value (93.33) in inquiry learning model were higher than the minimal value (60.00) and the maximal value (90.00) in conventional learning model. However, the graph showed the increase
of learning outcomes of the midwifery students of associate’s degree education for the two learning models.

IV. DISCUSSION

1. The difference of learning process by conventional learning model and inquiry learning model for the midwifery students of associate’s degree education

Besides teacher or lecturer as the main factor in creating effective learning, students’ enthusiasm, available learning facilities, safe and comfortable classroom and other affecting factors also take part in the achievement of learning objectives (Fakhrurrazi, 2018). Learning process in the present study includes lecturers’ activities, students’ activities, students’ responses on learning models, lecturers’ characteristics, and learning facilities.

As shown in Table 2, percentage of lecturers’ activities in conventional learning model and inquiry learning model is not quite different. That means lecturers are still playing their important active roles for the two learning models. In conventional learning model, activities of the lecturer during learning process begins with the introductory stage where the lecturer opens learning sessions and explains the learning goal. Then at the core activity stage the lecturer presented arranged learning contents on the slides of powerpoint using LCD in the front of the classroom and let the students if they want to ask and answer questions. Lastly the lecturer offered a test after presented learning contents and gave home tasks to the students. Ngalimu (2016) points out that lecture in conventional learning model is the center of learning process and the main source of information and knowledge. For that reason, conventional learning model is a lecturer-oriented approach such that the lecturer is more active in learning process.

Lecturers’ activities in inquiry learning model, activities of the lecturer during learning process begins with the introductory stage where the lecturer opens learning sessions and divided the learning group of students, then the lecturer conduct orientation, then the lecturer involved actively in directing and guiding the students in formulating the problems, determining hypothesis, collecting data, testing hypothesis and drawing conclusions or answers concerning the asked problems. Later, at the last of discussion, the lecturer drew conclusions from results of the discussion among the all students in the classroom and closed the learning session. In this learning setting, the lecturer was still actively in guiding and supervising the students in learning process according to the steps of inquiry learning activities. Hanafiah (2009) in Amilia (2017) implies that inquiry learning process requires lecturer to act as facilitator, resource person and group motivator.
From results of the Mann Whitney U test in the present study showed that p-value was 0.001 (< α=0.05), meaning that there was a significant difference of the variable of lecturers’ activities between conventional learning model and inquiry learning model. This significant difference was observed from lecturers’ activities during learning process. In conventional learning model, lecturers were active in conveying learning contents or provider of information, whereas in inquiry learning model, lecturers were more active in guiding and directing students finding out information by their own efforts. Lecturers’ activities in this learning model were not associated with the levels of education of the lecturers because lecturers’ characteristics for the two learning models had the same levels of education at the level of higher than bachelor degree education.

As shown in Table 2, mean percentage of students’ activities in inquiry learning model is higher than that of conventional learning model, meaning that students are more active involving in learning process in the inquiry learning group compared to the conventional learning group. In conventional learning model, most learning activities of the students were observed attentively the explanation of the lecturer pertaining to the presented learning contents. Enthusiastic level of the students in the conventional learning model group was observed by activities of the students when watched attentively of the lecturer during presentation of instructional objectives in the classroom and home tasks. Observations were also undertaken when the students asked questions, answered the offered questions by the lecturer as well as exercise problems at the last of learning session. In this conventional learning group, the enthusiastic level of students was observed more intense in watching attentively the learning contents presented by the lecturer. As demonstrated in the study of Mardini (2008), lecturer is the main actor in the course of learning process whereas students are the only a passive receiver of the information in conventional learning model.

On the other hand, in inquiry learning model, the students conducted group discussion in finding out the answers pertaining to the given problems by the lecturer. Enthusiastic level of the students in the conventional learning model group was observed by activities of the students in formulating problems, determining hyphotesis, collecting data, testing hyphotesis and drawing conclusions. In addition, the comprehension of the students in presenting results derived from the group discussion and their ability in making responses to other groups of the students. Indriwati et al (2018) point out that learning model paves the way for the students in conducting activities of investigation and finding solutions and actively direct involvement in finding and understanding of self-concept in increasing their self-confidence in conducting communication and expressing ideas to others.
Percentage difference of students’ activities was also proven from results of the Mann-Whitney U test with p-value 0.001 (< α=0.05), meaning that there was a significant difference of the variable of students’ activities between conventional learning model and inquiry learning model. The difference was significantly observed from students’ activities during learning process. In conventional learning model, students were listening passively information presented by lecturers, whereas in inquiry learning model, students were actively finding out knowledge by their own creativity through the guidance of lecturers.

In conventional learning model, as performed in didactic lecturing, lecturer is more dominant in learning activities (Nugraeny et al., 2017). This was seen from results of the present study that the percentage of lecturers’ activities and students’ activities in inquiry learning model was 87.28% which higher than that of conventional learning model at 79.79%. The present study is consistent with the study of Maurin et al. (2018) that teachers are more active while students tend to passive and quite non-communicative in conventional learning.

In the present study, the percentage of lecturers’ activities and students’ activities was 90.03% in inquiry learning model, almost equals with the percentage of lecturers’ activities in conventional learning at 89.58%. This finding is compatible with the study of Irawati & Idrus (2020) that lecturers’ activities and students’ activities could be increased by implementing inquiry learning. Learning activity achievement by inquiry learning model gives a positive contribution on the raise of learning outcomes. Moreover, this learning model also enhances mastery of learning concept by students (Risma Munandar et al., 2019).

In the present study, analysis of the questionnaire data implied that students’ responses in inquiry learning model was higher (84.90%) compared to students’ responses in conventional learning model (68.75%). That means students has more enthusiasm in inquiry learning model compared to conventional learning model. This finding is consistent with the study of Azmy et al. (2019) from interviews among students who expressed their comments that inquiry learning in the classroom making learning atmosphere is more comfortable and meaningful and being motivated.

Students’ enthusiasm in inquiry learning was also seen from the median value of students’ responses (85.5) which higher than that of conventional learning model (70.5). The difference of these values were proven from the Mann-Whitney U test with p-value of 0.000 (< α=0.05), meaning the variable of students’ responses showed a significant difference between conventional learning model and inquiry learning model.
In general, the assessments of lecturers’ characteristics consist of time discipline, speech style, learning content comprehension, wide know-how, and proficiency in teaching as well as evaluating skill, good looking and good rapport (Simarmata, 2016). Results of the data assessment revealed that the percentage of lecturers’ characteristics in inquiry learning model was 96.25% higher in comparison to that of conventional learning model of 87.50%. However, taken as a whole, lecturers’ characteristics for the two learning models were classified in the category of good.

Median value of lecturers’ characteristics in inquiry learning model accounted for 29 higher than that of lecturers’ in conventional learning model amounted to 26. The difference between the two values derived from the Mann-Whitney U test with p-value of 0.001 (< α=0.05), meaning the variable of lecturers’ characteristics showed a significant difference between conventional learning model and inquiry learning model.

The values of learning facilities at the two education institutions almost equal for the two learning models. The percentage of learning facilities in conventional learning was 94.50% and the percentage of learning facilities in inquiry learning model was 95.30%. Learning facilities for the two learning models were in the good category.

From statistical analysis using the Mann-Whitney U test showed that p-value for learning facilities was 0.569 (< α=0.05), meaning there was a significant difference of learning facilities between conventional learning model and inquiry learning model. Our finding is consistent with the study of Wulandari & Muhiddin (2019) that there was a significant difference of learning facilities on the learning performance of students and the study of Inayah et al. (2013) that learning facilities showed a significant influence on the learning performance of students at the rate of 28.1%. However, our finding is not consistent with the study of Sunadi (2015) that the use of learning facilities showed no significant influence in learning performance of students.

2. The difference of influence of conventional learning model and inquiry learning model on learning outcomes of midwifery students of associate’s degree education

Results of the analyses at pretest and posttest demonstrated that each learning model group showed significantly increase of learning outcomes of the students with p-value 0.000 (< α=0.05). Results of the analysis revealed that either conventional learning model or inquiry learning model gave a significant influence on learning outcomes of students.

Statistical tests for values at pretest dan posttest for the two learning models showed a difference value between the two learning models. Median value of pretest in the conventional learning model group was 36.67 and median value of pretest in the inquiry
learning model group was 40.00. The gaps number of median pretest were not quite different between the two groups learning models was 4.33 points indicates the student's initial ability in the control class and the experimental class is at a level not quite different.

Then the median value of posttest in the conventional learning model was 73.33 and the median value of posttest in the inquiry learning model was 80.00. The median of posttest between the two learning models shows a not quite difference of as many as 6.67 points. From the preliminary studies conducted it can be known that the inquiry learning model has never been applied at Poltekkes Kemenkes Kendari, as well as a teaching lecturer who says has never used an inquiry learning model so it faces some constraints in the application of this learning model. The lecturer still lacks understanding learning steps that fit the learning inquiry model, so there are several steps of the inquiry learning model that the teaching lecturer has not yet taken maximum. The lecturer has constraints in directing students to be active in group work and perform activities according to steps on the inquiry learning model. Teaching lecturers who have aged >40 years and long periods of employment have become very used to using conventional learning models while teaching, so that at some steps lecturers still look more dominant than college students. This led to the application of student-centered inquiry learning models not yet fully maximal. Nevertheless, from the results of the study showed the inquiry learning model applied to the experimental class was already good at improving the active pastissipation of students in classroom learning so as to be able to improve student knowledge. On student inquiry learning models and lecturers are both active in the learning process. Whereas in conventional learning models lecturers must be very active to encourage students to be active in the learning process.

Refer to the median difference between the two learning groups, median difference of inquiry learning model was 40.00 higher in comparison to median difference of conventional learning model at value of 36.66, meaning that effectivity of inquiry learning model was better compared to conventional learning model. There are several drawbacks in learning and teaching process in the classroom for the control group (conventional learning model) such as the students was silent only, almost no activities in asking and responding questions pertaining to the presented learning contents. Some students sometimes paying attentions to themselves, behaving playfully or talking about other matters with their classmates. Although the lecturer occasionally asked questions or gave a chance to each student to ask a question, most of them did not show active responses or silent and looked each other. The lecturer explained only learning contents until the last of learning content.
In conventional learning model, the lecturer is more active as the presenter of learning contents while students are passive recipients of the information leading to lower learning outcomes compared to inquiry learning model. Sofiati (2013) points out that lecturer is a dominant actor and students are a passive receiver with lower effectiveness of learning outcomes in conventional learning. This learning process is not quite enough in increasing active participation of students. Kalyasundaram (2017) suggests that transfer of knowledge in a one-way direction making students grasp lower knowledge. National Training Laboratories also reported that the comprehension of learning contents of students tend to lower in conventional learning model in the form of didactic lecturing with the comprehension achievement level of learning was 5% (Safriana, 2014).

In the intervention class with inquiry learning model, lecturer play roles as the facilitator in guiding students in learning activities. Inquiry learning model was really involving students to act actively in learning process since students were active in finding solutions for a given problem. This process assists students in recalling the presented study subject by formulating a given problem and finding solutions according to the necessary information. One of the drawbacks of this learning approach was students sometimes hesitate to express their opinions. However after several sessions in inquiry learning model under the guidance of the lecturer, more students were not hesitate anymore asking questions and expressed their opinions. Nurhadi (2020) points out that inquiry learning model creates learning setting more meaningful and embedding memories of students. Munandar (2019) also points out that inquiry learning model can increase learning outcomes of students and comprehension of learning contents to students.

The research of Ekajayanti (2017) revealed the average score of student learning results with a 72.7 well-regarded inquiry learning model, higher than the average score of student learning results using a conventional learning model of 63.3 that is fairly classified. The results of this study showed scores of student learning outcomes in inquiry learning models was higher compared to conventional learning models.

The study of Sofiati et al. (2013) revealed that the increase of learning outcomes of students in inquiry learning was better compared to conventional learning in the form of didactic lecturing in conjunction with a question-and-answer session. The percentage of learning outcomes in inquiry learning model were 28.51 folds higher compared to conventional learning model through didactic lecturing along with question and answer with the increase of learning outcomes was 8.19. Inquiry learning demonstrated 57.71 folds higher in learning outcomes of students compared to conventional learning.
CONCLUSIONS

Based on the study results, several conclusions were drawn in the following:

1. The implementation of inquiry learning model resulted in higher effectiveness of learning outcomes compared to conventional learning model.

2. Value the difference of learning process using conventional learning model and inquiry learning model for the midwifery students of associate’s degree education in family planning services and reproductive health study courses:
   a. Lecturers’ activities during learning sessions in the classrooms conventional learning model and inquiry learning model showed almost equal percentage, which is 87.28% and 89.58% respectively.
   b. Students’ activities in conventional learning model of 79.79% and inquiry learning model of 90.03%, showed that students more active involvement in learning process in inquiry learning model.
   c. Students’ responses in conventional learning model of 68.75% and inquiry learning model of 84.90%, showed that students are more enthusiastic in inquiry learning model.
   d. Lecturers’ characteristics showed conventional learning model of 87.50% and inquiry learning model of 96.25%.
   e. The percentages of learning facilities at the two higher education institutions and the classrooms were not quite different between the two learning models, which is 94.50% dan 95.30%.

3. Results of analyses of pretest and posttest for the two learning models revealed that each learning model could significantly increase learning outcomes of students. The results of the analysis show that conventional learning models and inquiry learning models have an influence on student learning outcomes. The median difference between the two groups of learning models showed that the inquiry learning model has a higher difference of 40.00 compared to the conventional learning model of 36.66.

BIBLIOGRAPHY


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