Application Model Of Learning B-O-R-N With Moodle Basic For Improving Student Learning Result In Operating System Subject In SMKN 2 Karanganyar

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ABSTRACT

This research is Classroom Action Research (CAR) by using B-O-R-N model based on moodle Each cycle consists of planning stage, action implementation stage, observation stage, and reflection phase. Subjects in this classroom action research were class X students RPL A SMK Negeri 2 Karanganyar academic year 2016/2017 with the number of learners 36 learners. Data collection was done by using documentation techniques, interview techniques, online test techniques and group discussion results. The observed aspects consist of cognitive, affective and psychomotor aspects. Data analysis technique used is descriptive comparative. Compare students' work results by using percentage figures. The results obtained as follows: 1) achievement of cognitive aspects on precycle 38.89% in the first cycle increased 52.79% and again increased in the second cycle of 77.78%. 2) achievement of affective aspect on precycle = 19,44%, cycle I = 61,11%, and cycle II = 86,11%. 3) psychomotor aspect achievement on precycle = 41.67%, cycle I = 69.44%, cycle II = 83.33%. Based on the result of the research, it can be concluded that the learning model of B-O-R-N assisted by moodle media is effective in improving learners' learning outcomes in the subject matter of administration of open source operating system class X RPL A SMK Negeri 2 Karanganyar periode 2016/2017.

1. INTRODUCTION

To achieve success in education requires several supporting factors. One of them is the learning model. Learning model is one of the external factors that support the success of learners learn. In addition, teachers also play an active role in the success of a teacher is expected to be productive by having good creativity and innovation to develop teaching methods in order to create a good learning and interesting for learners. Therefore, it is necessary a form of learning that is not only capable of materially but also has the ability that is static, so in addition is expected to improve learning achievement learners and learning methods that are applied can also make learners actively involved in the learning process becomes more maximum.

Using the B-O-R-N learning model, a learning model involving learners becomes the subject of learning, the B-O-R-N model is also considered appropriate to be used in this study. With the hope that the learning model can be more meaningful and can have a positive impact to improve learning outcomes of learners especially in the lesson of Operating System class X (ten) Software Engineering in SMKN 2 Karanganyar. From the observations made known the percentage of graduation or learners who Middle Test in Semester, on the subjects operating system for 36.11 percent (13 learners). While 63.89 percent (23 students) can not reach or exceed the Minimum Exhaustiveness Criteria established by the school on the subjects of operating system class X Software Engineering is 70. Surely in this case there are problems that must be fixed. This is also due to the motivation of learners in following less operating system lessons. In addition, the development of learning media in SMKN 2 Karanganyar still done conventionally assisted LCD media in real class. Though facilities such as the media website learning or commonly we call with (e-learning) in this case using Moodle is considered not optimally utilized. Based on the formulation of problems that have been described previously, the objectives to be achieved in this study is to determine the application of BORN

learning model and to determine the effectiveness of BORN-based learning model assisted by media moodle to improve learning outcomes in class X (ten) SMK Negeri 2 Karanganyar 2016 / 2017.

2. RESEARCH METHOD

In this CAR model used is a model proposed by Kurt Lewin (1946) Model Kurt Lewin, is a model that has been the main reference (base) of various action research models [2]. The form of this research is an Experimental Class Action Research that is PTK held with effort to apply the method, or strategy effectively and efficiently in teaching and learning activity. This research was conducted in SMK Negeri 2 Karanganyar academic year 2016/2017 with the number of students as much as 36 people who performed about 3 months. The goal is to improve the learning outcomes of learners. Source of data needed in this research is an informant, document / archive, place or event, and data of each cycle. While the data collection techniques such as observation, interviews, tests, and document analysis. After the data - the required data collected then the data will be tested in its validity with triangulation method. According to [5] Triangulation method is the effort to check the validity of data, or check the validity of the findings can be done by using more than one technique of collecting the same data. Implementation also by way of check and recheck. The data analysis technique used is comparative descriptive to compare learners' learning outcomes in each cycle.

To measure a research success assisted by the existence of research achievement indicators, Indicator of research achievement is a threshold of achievement after reaching the target then the cycle will be stopped. In this study the cycle will be stopped if it has achieved the success of this study with the target of 70% of the total 36 students can obtain satisfactory learning outcomes. In other words, get results above the Minimum Exhaustiveness Criteria that has been determined by the school that is 70.

3. RESULT AND ANALYSIS
3.1. RESULT
Comparison of Cognitive Test Result

The average comparison of cognitive observation results of anti-social learners can be seen in table 1.

Table 1. Comparison of Cognitive Intercultural Test Results

No.	Achievement of Cognitive Learning Outcomes	Precycle	Cycle I	Cycle II
1.	Finished student (value ≥ 70)	14	19	28
2.	Unfinished student (value < 70)	22	17	8
3.	Average value	65,07	67,64	77,57
4.	Percentage of Completion	38,89%	52,79%	77,78%
5.	Percentage of Non-Completion	61,11%	47,21%	22,22%

Increased test results of students in the cognitive sphere of each cycle can be seen in Figure 1, and the average value of cognitive test results can be seen in Figure 2.
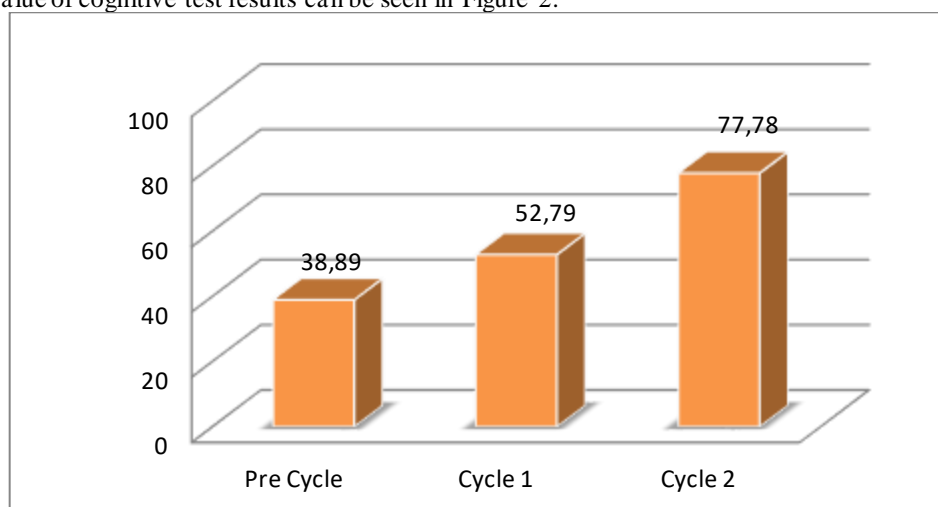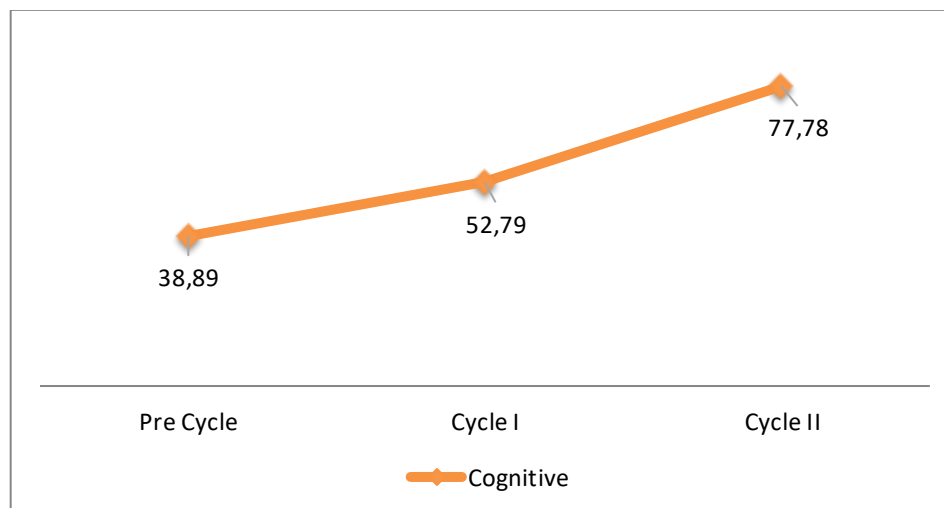

Figure 1. Comparison of Cognitive Test Result Diagram

Figure 2. Average Percentage of Cognitive Range of Test Result for Each Cycle Diagram

Based on Figure 1, and Figure 2 can be seen that the percentage of cognitive learning outcomes of learners always increase in each cycle. Percentage mastery of students' cognitive learning outcomes at the pre-cycle stage, i.e. before the application of learning model of B-O-R-N based on the model is 38,89% and mean of the cognitive observation result before applying of B-O-R-N model based on Moodle is 65,07.

After the application of learning model of BORN based on Moodle, the percentage of students' cognitive learning achievement improved from cycle I of 52,79% to 77,89% in cycle II and the average result also increased from cycle I was 67,64 to 77,57 In cycle II. Based on these data, it can be concluded that the application of learning model B-O-R-N based on module can improve cognitive learning outcomes of learners.

Comparison of Affective Test Result

The average comparison of affective student test results between cycles can be seen in table 2.

Table 2. Comparison of Intercultural Affective Interval Test Results

No.	Achievement of Cognitive Learning Outcomes	Precycle	Cycle I	Cycle II
1.	Finished student (value ≥ 70)	7	22	31
2.	Unfinished student (value < 70)	22	17	8
3.	Average value	63,33	70,02	75,00
4.	Percentage of Completion	19,44%	61,11%	86,11%
5.	Percentage of Non-Completion	80,56%	38,89%	13,89%

Increased result of the student observation affective span of each cycle can be seen in figure 3, and the average of result of affective observation can be seen in figure 4.
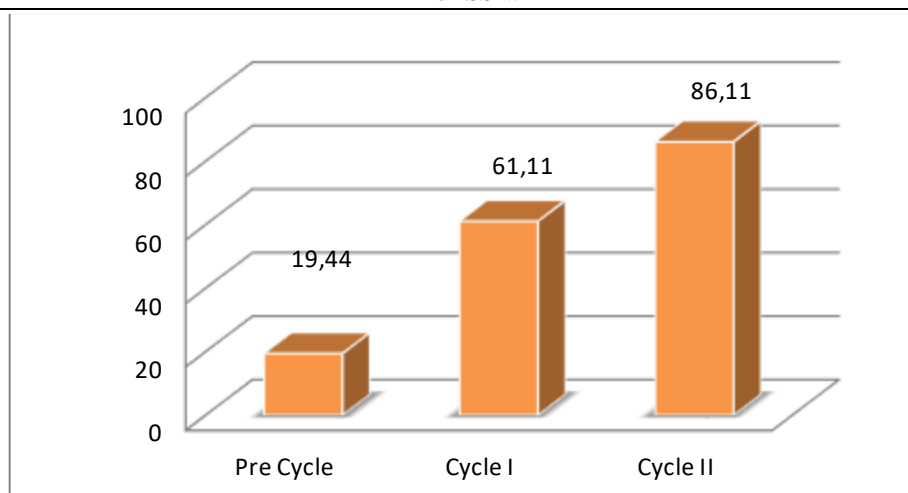
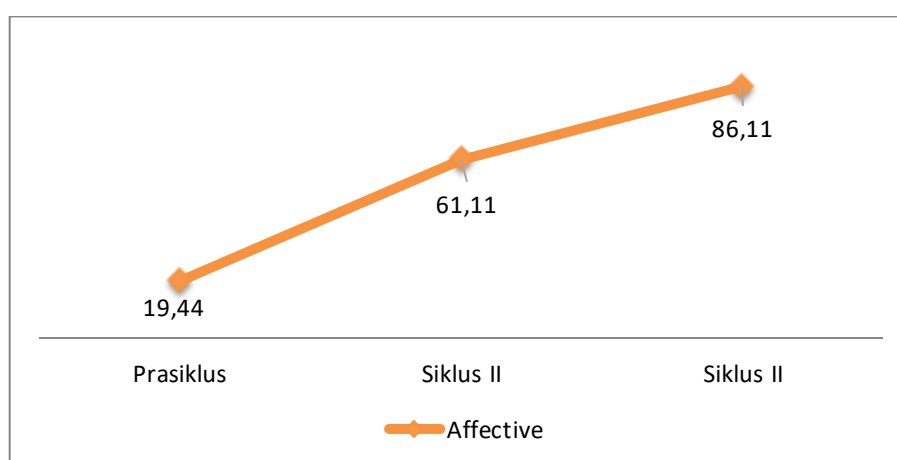*Figure 3. Comparison of Intercultural Affective Interval Test Results*

Figure 4. Average Percentage of Differential Test Results of Affective Tests Each Cycle

Based on Figure 3, and Figure 4 it can be seen that the percentage of students' cognitive learning outcomes always increases in each cycle. Percentage mastery of students' cognitive learning outcomes in pre-cycle stage, is before the application of B-O-R-N model based on Moodle is 19,44% and mean of the cognitive observation result before applying of B-O-R-N learning model is 63,33.

After the application of learning model of BORN based on Moodle, the percentage of students' cognitive learning achievement increased from cycle I 61,11% to 38,89% in cycle II and the average result also increased from cycle I of 70,02 to 75, 00 on cycle II. Based on these data, it can be concluded that the application of learning model of B-O-R-N based on module can improve students' affective learning results.

Comparison of Psychomotor Test Results

The average comparison of students psychomotor test results between cycles can be seen in table 3.

Table 3. Comparison of Psychomotor Intercultural Test Results

No.	Achievement of Cognitive Learning Outcomes	Precycle	Cycle I	Cycle II
1.	Finished student (value ≥ 70)	15	25	30
2.	Unfinished student (value < 70)	21	11	6
3.	Average value	66,25	69,44	75,45
4.	Percentage of Completion	19,44%	61,11%	86,11%
5.	Percentage of Non-Completion	80,56%	38,89%	13,89%

Increased student learning outcomes in the psychomotor realm of each cycle can be seen in Figure 5, and the average value of psychomotor observation results can be seen in Figure 6.
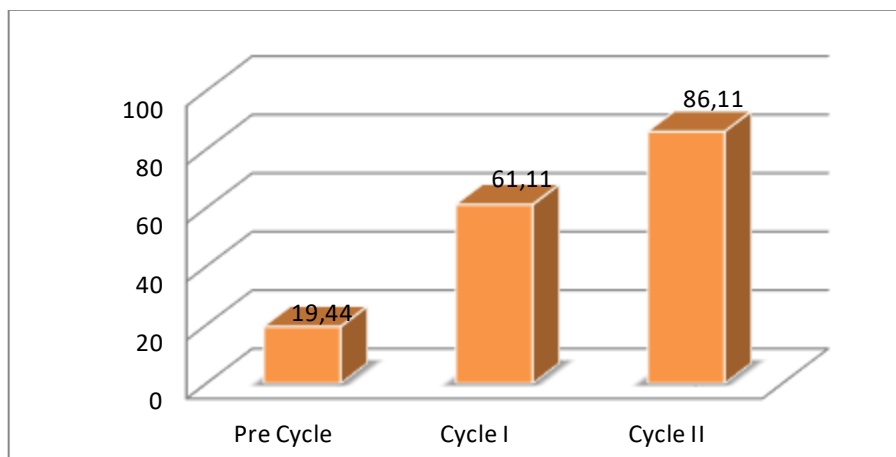
Figure 5. Comparison of Intercultural Psychomotoric Interval Test Results
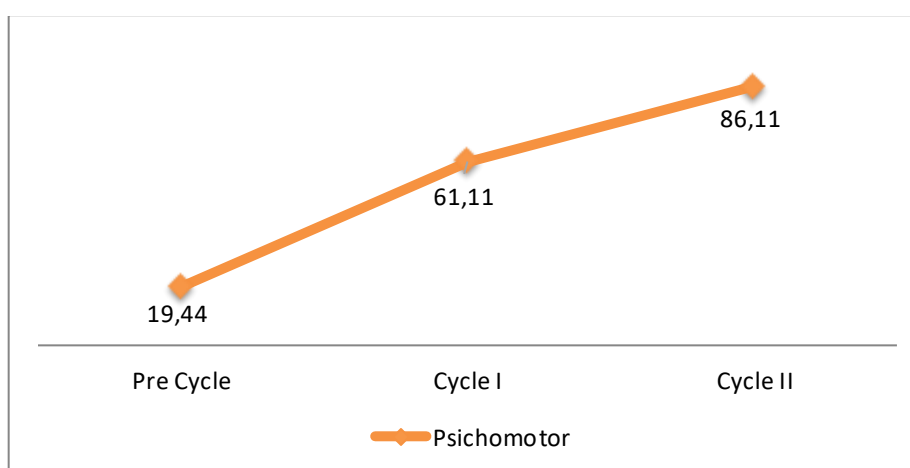

Figure 6. Percentage Complete Chart of Psychomotor Observation Results Each Cycle

Based on Figure 5, and Figure 6 it can be seen that the percentage of students' psychomotor learning outcomes always increase in each cycle. Percentage mastery of students' psychomotor learning outcomes at precycle stage, is before application of the B-O-R-N learning model is 51,42% and mean of the result of psychomotor observation before applying of B-O-R-N learning model is 73,74.

After the implementation of learning model B-O-R-N, the percentage of students' Psychomotoric learning completeness increased from cycle I of 68.57% to 88.57% in cycle II and the average result also increased from cycle I of 73.88 to 79.18 at Cycle II. Based on these data, it can be concluded that the application of learning model B-O-R-N based moodle can improve students' Psychomotor learning outcomes.

Comparison Of Learning Completed Cycle
Based on the data that have been obtained directly at Vocational High School 2 Karanganyar, the comparison percentage of learning mastery per cycle for cognitive, affective, and psychomotoric areas, learners can be seen in table 4.

Table 1. Comparison Percentage of Learning Completion Each Cycle

Cycle	Cognitive	Affective	Psichomotoric
Pre Cycle	38,89%	19,44%	41,67%
Cycle I	52,79%	61,11%	69,44%
Cycle II	77,78%	86,11%	83,33%

Comparison percentage mastery learning each cycle in cognitive, affective, and psikomotorik aspect learners can be described in bar chart as in picture 7.
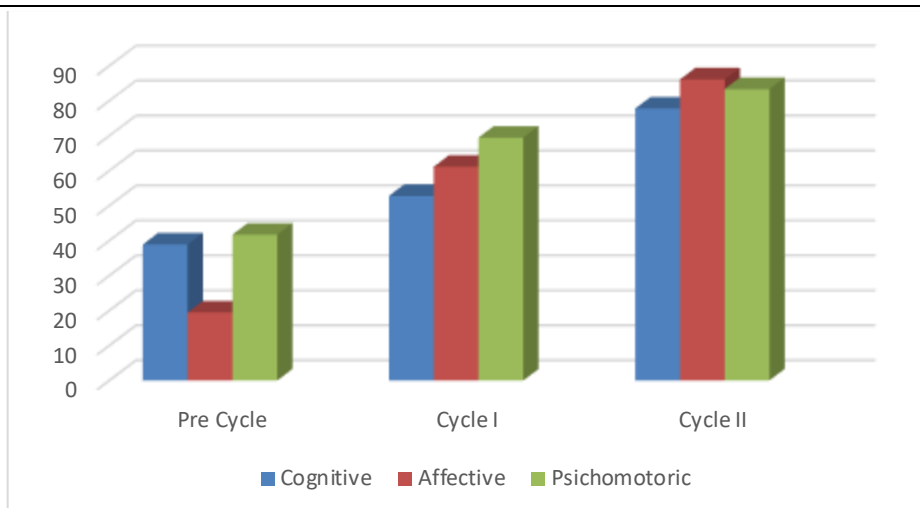
Figure 7. Diagram Perbandingan Persentase Ketuntasan Belajar Peserta Didik Tiap Siklus

3.2. DISCUSSION

The initial conditions of some realms are still low because the students receive regular lessons before the research model is conducted, ie the teacher conveys the material informatively without involving the learners' role in extracting information from various sources.[1], stated that conventional learning activities focus on intellectual development through the way to learn memory about things that have been read and the tasks that have been done by the teacher. This study aims to determine the effect of B -O-R-N based on moodle learning outcomes. Discussion activities undertaken are considered to be able to train the analytical skills, and decision-making of learners presented in oral and written form.

Activity B-O-R-N Learning Model combines several aspects of technology, both from domestic and international that are used as a tool in the search for knowledge from learning resources. Application of Technology to improve learning involves not only tools, but also designs that will Help foster critical thinking skills, promote overall concepts and stimulate learners Have meaningful learning [3].

In this case Teachers change their role from instructors to counselors who provide guidance so that learners can think, analyze, design and plan together, and lead to Implementation to achieve targets. Therefore, teachers must prepare various tools For analysis so that learners can use it as a learning tool. In this case, researchers used Moodle as the medium. This is important because intellectual Skills are influenced by analytical skills [6]. Also, learning groups produce better learning than individual learning [4]. Grouping Learners to share and expand the concepts of experts, teachers and friends, together with cooperation in problem solving and discussion and lesson conclusions, all help to encourage and promote the creation of knowledge and improve the intellectual and analytical skills of learners. In this lesson all learners can be involved in learning, and the classroom atmosphere is more lively and focused on one topic of discussion. So at the end of the lesson, learners are not in vain to follow the learning.

4. CONCLUSION

Based on the results of research that has been implemented, obtained data increase learning outcomes of learners on the subjects of the operating system is characterized by the increased ability of learners in identifying well the knowledge of open source operating system administration (cognitive aspects), enthusiastic attitude of learners in presenting the results of administration Open source operating system (affective aspect), and the increasing of learners process skill in using e-Learning media applied (psychomotor aspect).

Therefore, it can be concluded that the application of learning model of BORN based on the model of the operating system running effectively and can improve and improve the learning outcomes of class X students RPL A SMK Negeri 2 Karanganyar academic year 2016/2017, both learning in the cognitive, affective, or psychomotor.

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