Increasing of Learning Activeness Through Problem Based Learning Models Aided by Digital Snakes and Ladders Game

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1.   Abstract

The ideal social science learning is learning that is able to provide assistance to students to be able to understand the concept of knowledge that is able to have an impact on student learning outcomes. one of the factors that has an impact on students' understanding and learning outcomes is their activeness while participating in learning. The purpose of this study was to increase the learning activity of fourth grade students through the application of a problem-based learning model assisted by digital snakes and ladders game media. Collaborative classroom action research conducted using the Kemiis and Mc. Taggart with the following research steps; planning, action, observation, and reflection. The subjects in this study were 16 students consisting of 9 male students and 7 female students. Data collection was carried out by using observation and evaluation sheets. The data analysis technique used is descriptive quantitative and qualitative. Based on the research results show below; 1) the average score was 43.1 or around 68.9% of the maximum total score, 2) in the second cycle the results obtained were an average score of 51.9 with a percentage of 82%, in this second cycle all students have achieved active learning in the high category.

This is proof that the application of the problem-based learning model assisted by the digital snakes and ladders game is able to increase the active learning of students, especially in the content of social science lessons.

Keywords: *Active learning, PBL learning model, snakes and ladders game*

2. Introduction

Briggs in Rifai (2018: 170) argues that learning is a convenience that is received by students due to complex events. Meanwhile, according to the Law on the National Education System No. 20 of 2003 states that learning is a communication between students, teachers, and learning resources in their learning environment. One of the subjects in schools that must be included in the independent curriculum is social science. The purpose of social studies content in elementary schools is to equip students in studying, studying social phenomena and problems around them with knowledge and practical skills. The development of the learning process in the world of education is increasingly advanced and sophisticated. The more intense the emergence of the latest breakthroughs in the world of education, for example in the development of learning models. Today's learning model is increasingly demanding for educators and students to be actively involved in teaching and learning activities. In the "Merdeka" curriculum, learning is carried out by adhering to the principle of learning independence. Students are freed to explore their knowledge with the help of the teacher as a facilitator. With such an educational design, it is necessary to have active learning from all students in the class.

Active learning according to Sudjana in (Setyawan et al., 2019) is an act of an activity carried out by someone who is both physical and psychological. Meanwhile, according to Mudjiono & Dimyati (2009: 45), the activeness of students in the learning process takes various forms of activity, from physical activities that are easy to observe to psychological activities that are difficult to observe. In learning activities when the activeness of students is high, learning outcomes also increase. According to Numayani (2018: 37) learning outcomes are a specific statement that is embodied in written form to state behavior and appearance as an illustration of the expected learning outcomes.

Indicators of active learning according to Sudjana (in Prasetyo & Abduh, 2021) can be seen from several things, namely as follows. (1) When teaching and learning activities take place students participate in carrying out their learning tasks, (2) students want to be involved in solving problems in learning activities, (3) students want to ask friends or to teacher if they don't understand the material or encounter difficulties, (4) Students want to try to find information that is can be needed for solving the problems they are facing, (5) Students carry out discussions group according to the teacher's instructions, (6) Students are able to assess their own abilities and results obtained, (7) students practice solving problems or problems, and (7) students have the opportunity use or apply what has been obtained in completing the task or problem he faced.

Student activity can be stimulated by providing stimulus in the form of problems that need to be solved by students. The stimulus carried out can be collaborated with the help of educational games which make students more enthusiastic in processing and exploring their knowledge independently. Thus, this is very suitable when collaborated with problem-based learning methods.

Based on observations made by the author, the learning conditions of class IV have not fully met the indicators of achievement of active learning. This is evidenced by the fact that only a small proportion of students were moved to answer the questions posed by the teacher. In addition, the work on the LKPD given by the teacher was not carried out effectively and efficiently. The thing that is quite concerning when group activities do not occur active discussion activities. Based on these problems, the authors try to find a solution by applying the *problem based learning method* . According to Nurhadi et al as quoted in Mayasari et al., (2022) Problem Based Learning (PBL) is a teaching approach that uses world problems real as a context for students to learn critical thinking and problem skills,

as well as to acquire essential knowledge and concepts from the subject matter. Problem Based Learning is a form of learning that based on the constructivism paradigm, which is oriented to the learning process students (student-centered learning). While the teacher becomes a facilitator and supervisor (Siregar in Mayasari et al., 2022) . Relevant research related to increasing activity through learning methods was carried out by Hariandi (2018) with the research title "Increasing Student Activeness Using Problem Based Learning Models in Elementary Schools" with the result that there was an increase in three children who met the learning activity criteria. In line with the game-assisted learning model, relevant research has been conducted by Komari (2019) with the research title "Using Snakes and Ladders Media to Improve Learning Outcomes of Geography Mupel" the results obtained can be seen in the implementation of student learning that has begun to be orderly in implementing game rules props thematic snakes and ladders during learning.

Based on the description that has been described, it is necessary to carry out research that is intended to seek to increase learning activity through the problem-based learning model assisted by digital snakes and ladders media in class IV, especially in the content of social science lessons.

3. Method

3.1. Research subject

This study uses a qualitative method of collaborative classroom action research (PTKK). In this study using a research model according to Kemmis and MC. Taggart which consists of four stages of research, as follows. a) planning, b) action, c) observation and d) reflection (Prihantoro, Agung, 2019:56). The subjects of this study were all 16 grade IV students consisting of 9 male students and 7 female students. Out of the total number of students,

there are four students who are students with special needs under the care of a special accompanying teacher. The focus of this research is to increase the active learning of students by using the problem-based learning model assisted by the digital snakes and ladders game.

3.2. Material

Research instruments are tools or facilities used by researchers in collecting data to make it easier. The instrument in this study was the observation sheet, the observation sheet serves to assess the activities carried out by the researcher in carrying out the research. The next one is the sentence writing skills assessment rubric, this rubric functions to find out the sentence writing skills performed by students

3.3. Data Collection and Analysis

The data collection instruments used in this study were observation guidelines and questions for evaluating the content of science lessons. In this study, structured observation was used by observers in observing the achievement of indicators of active learning experienced by students while participating in learning activities.

Table 1. Criteria for Student Activeness

No	Achievements	Criteria
1	75%-100%	Tall
2	51%-74%	Currently
3	25%-50%	Low
4	0%-24%	Very low

The formula used to analyze the indicator score for learning activity is as follows, (Wulandari et al., 2021)

$$\text{Achievement} = \frac{total\ score\ obtained}{maximum\ score} \times 100\%$$

3.4. Research Ethics

All research or research involves humans as research subjects. Based on this, in this study there are basic principles of research ethics, including: the first is respect for people, in this case we must respect and appreciate students, where these students are research subjects, then the second is benefits, in this research there are benefits for namely providing benefits to learning in schools, especially in Indonesian subjects, namely to improve sentence writing skills, the third is not endangering research subjects, in this study, not endangering research subjects because during teaching and learning activities carried out in class, not outside the classroom.

3.5. Restricting the problem

Based on the field conditions during the research, there were several limitations. The intended limitation is that the research object is limited only to efforts to increase the learning activity of students in class IV using the problem-based learning model assisted by the digital snakes and ladders game with a total of 16 students. The application of the PBL model for variables other than activeness needs to be reviewed so as not to generalize research with similar variables.

4.   Results and Discussion

4.1.   Results

Before starting the research cycle, the authors conducted a pre-cycle observation to detect student learning activeness during conventional learning without applying the learning model to be used for research. In the pre-cycle observation, the writer observed each student's behavior with the help of an observation sheet with predetermined indicators of achievement. The results of this pre-cycle observation found that the activity of students was still low. This is proven through an assessment on the learning achievement indicator sheet which is still in the low category. Of the 5 indicators described in 21 descriptors of active learning, it shows a mean score of 28.4 with a percentage of 45% which is still in the low category. The Pracyclus observation data is as follows.

During the implementation of the cycle action, the researcher carries out the learning according to the syntax of *Problem Based Learning* as follows, 1) orients students to problems, 2) organizes students for learning, 3) guides investigations, 4) develops works and 5) analyzes and evaluates results.

In the problem orientation stage, students are given stimulants that are used to bridge students to the material to be taught. At this stage the researcher has begun to observe students through the observation guidelines that have been provided. In this case the researcher has observed the first indicator, namely "the activity of asking and answering". After that, the stage of organizing students to learn is carried out by providing trigger questions related to the material being taught, then students are asked to share their experiences. In this stage the researcher also observed the activeness of students who dared to share their experiences.

The third stage in this learning step is that students are asked to work in groups to work on LKPD. The first LKPD is filled with how to discuss issues related to regulations in their environment. Meanwhile, the second LKPD presents the rules and answer sheets for the digital snakes and ladders *game.* In this stage students will play group games with the mechanism of shaking the dice and running the number of dice obtained. After that they have to answer the questions in the block where the pawn stops. Answers are obtained by discussing in groups and written in the LKPD.

After that students were asked to present all the results of their discussions in front of the class, while other groups who did not present were asked to provide responses and confirm answers. The activity was closed with reflection between students and the teacher which was carried out by asking questions together to conclude today's learning material. At the end of the activity, a formative test is carried out by working on evaluation questions distributed by the teacher. The follow-up to this evaluation is the provision of remedial and enrichment and after that prayer.

The problem based learning syntax is applied repeatedly in two cycles of classroom action research until the results match what is produced. The results of pre-cycle research up to cycle II are as follows.

Table 2 Research Result Data

No	Activity	Average Score	Percentage	Category
1	Pracyclus	28,4	45%	low
2	Cycle I	43,1	68,4	currently
3	Cycle II	51.9	82%	tall

Based on the table, it can be seen that during the pre-cycle the learning activity of

students is still far from the minimum criteria, namely with an average score of 28.4 with a percentage of 45% so that it is necessary to take action for cycle I. students rose even though they were still in the medium category with an average score of 43.1 with a percentage of 68%. In cycle II using the same method, the active learning of students seemed to increase quite a lot with an average score showing a result of 51.9 with a percentage of 82% which was classified in the high category.

Diagram 1. Cycle Research Data Distribution
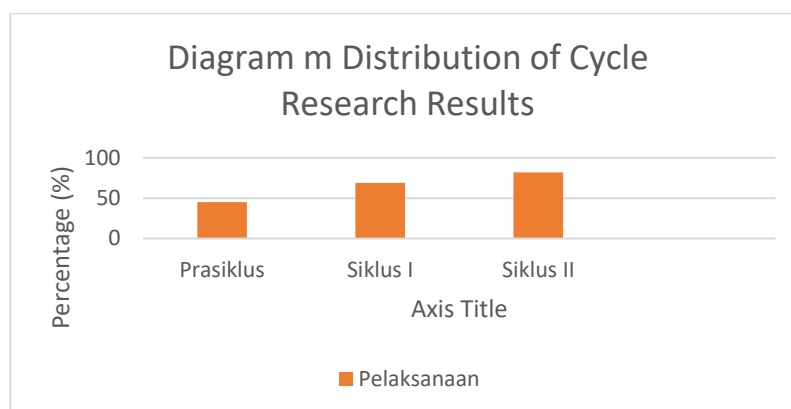
4.2. Discussion

The active learning of students in science learning, especially in the social sciences group, has increased after applying the problem-based learning model assisted by the digital snakes and ladders game. This can be proven through the table data from pre-cycle observations up to the second cycle which show significant results.

Based on the observation data table for the first cycle, the average score was 43.1 or around 68.9% of the maximum total score. In the first cycle there were only 2 children who had achieved learning activity in the high category, while 14 other students were still in the

medium category. However, these results appear to have increased when compared to the implementation of learning during the pre-cycle. The mean score for the indicator of active learning from 16 students was only 28.4 or about 45% of the maximum total score . All students still get a score of learning activity in the low category.

Meanwhile, according to the categorization of students' learning activeness, it can be said to be high if it reaches 75% of the average total score obtained. Thus it is necessary to have a second cycle of action to really prove that the application of the game-assisted learning model is effective for students. In the second cycle, the results obtained an average score of 51.9 with a percentage of 82%. In this second cycle, all students have achieved active learning in the high category. This is proof that the application of the problem-based learning model assisted by the digital snakes and ladders game is able to increase the active learning of students, especially in the content of social science lessons.

Even though they have experienced an increase and have achieved a high category of learning activity, teachers still have to guide students and understand each student's needs and create an interactive atmosphere with students. based on observations in the second cycle of this second meeting, the action will be stopped because the active learning of students has reached the set targets. Based on the results of observations of students' active learning increasing in cycle I to cycle II, it can be concluded that this researcher was successful in cycle II

5. Conclusion

The active learning of students can be increased through the application of problem-based learning models assisted by digital snakes and ladders games. This can be proven through increasing research results in each cycle. Based on the indicators of the achievement of active learning, students have achieved a score of 51.9 out of a maximum score of 66. The percentage obtained by students in terms of active learning has reached 82% after implementing the problem-based learning model assisted by the digital snakes and ladder game.

Thus in learning activities when the activity of students is high, the learning outcomes also increase. According to Numayani (2018: 37) learning outcomes are a specific statement that is embodied in written form to state behavior and appearance as an illustration of the expected learning outcomes. Kristin (2016: 92) suggests that learning outcomes depend on what has been learned and known. Based on this opinion, it can be concluded that the active learning of students will affect the understanding and learning outcomes of students

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