Learning Motivation Strategy Through Problem-Based Learning

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Abstract: The purpose of this study is to determine the effectiveness of problem-based learning model to improve learning motivation. The research used quantitative research method of a quasi-experimental type. The data were gathered by closed questionnaire in the form of attitude scale from Likert. The validity and reliability test used SPSS 17.0 software. The prerequisite test used the normality test from Lilliefors. A non-independent t-test was used as a data analysis technique. The results of this research data analysis show that t-count, 2.760> t-table 1.708 with a significance level of 5%. Based on the results of the analysis, it can be concluded that the problem-based learning model is sufficient to improve learning motivation. Likewise, with the results of observations obtained conclusion that the model of problem-based learning can improve student learning motivation evidenced by the emergence of interest, interest, and tenacity of students to solve problems.

1 INTRODUCTION

The learning process of educational is organized in an interactive, inspirational, fun, challenging, motivational way for the students to participate actively, and provide sufficient space for creativity, and independence according to the talents, interests, physical, and psychological development of learners (Menteri Pendidikan dan Kebudayaan Republik Indonesia, 2013). The demand for learning in the 21st century is learning that can stimulate students actively seek and build their knowledge. In other words, the learning process has been directed to the formation of high-level or high order thinking skills. Most of the contemporary educational reforms require teaching and learning that foster profound understanding. The reform emphasizes that it is not important for students to remember and memorize facts and information, but it is important for them to create new knowledge by analyzing, evaluating, and integrating information (Choi, 2017).

Learning-oriented development of the ability to construct their knowledge requires a high learning motivation from students. In education, teachers only act as facilitators and mentors, while students have greater input and responsibility in determining what and how they should learn (Witte and Rogge, 2012). Motivation can be interpreted as a force that

causes people to reach a goal. In the theory of cognitive development, motivation is perceived as an unconscious effort that regularly leads to the complexity and development of different individual mental structures (Alhodiry, 2016). Motivation evokes motives, generates mobility to achieve a satisfaction or purpose (Aminah, 2016). In other words, motivation can manipulate, inspire, and persuade students by encouraging and promoting their professional goals. Motivation is more pragmatic in which a person makes choices about the purpose of pursuing and one's effort to be continued (Bukhary and Bahanshal, 2013).

Learning motivation can be defined as the availability of a student to study intensely and consistently to realize the goals of the education, in the hope that the efforts undertaken will lead to the realization of an individual goal. These personal goals are generated, then perceived, and are the right decisive reasons for action and work within the classes (Zlate and Cucui, 2015). Learning motivation is a force that encourages students to learn the topic or subject matter to reach the learning objectives. Motivation is an essential for student learning activities, where they are directed to achieve the goals, will be resilient and not easily give up. A student classified as having low or high learning motivation can be determined by learning motivation indicators.

Indicators of learning motivation include: (1) diligent in facing tasks, (2) tenacious facing difficulties, (3) showing interest in various problems, (4) getting bored with routine tasks, (5) preferring to work independently, (7) is not easy to let go of things that are believed, (8) happy to find and solve problems (Sardiman, 2001).

However, researchers found that many students had low learning motivation, especially elementary school students. The statement was supported by data (3rd class daily re-examination) which the researchers collected and analyzed on May 29, 2017, at SDN Ngarum 2 Sragen. The conclusion, 19% (5 students) of the total grade 3 (26 students) has reached Minimum Exhaustiveness Criteria (KKM), while the remaining 81% (21 students) have not reached KKM. Also, the low motivation of student learning is also supported by the results of observations of class 3 on May 29, 2017, at SDN Ngarum 2 Sragen, students tend to be passive and often do not complete the task, less interested in learning and do not want to ask questions about the material that has not been understood to their friend or teachers. This will impact on the ineffective of education, which will ultimately impact to the unattainable learning objectives.

Facts about the low motivation of student learning are also found on the results of research Syriac, Maulana and Julia (2016), the percentage of students who are afraid to miss the math lessons only amounted to 44%, so 56% of students do not feel frightened to lose math lessons. This means that students who do not feel afraid to miss math lessons are students who do not have the motivation to learn math is high. Also, the percentage of students who did not feel bored with math lessons was only 42%, so that 58% of other students were bored with math lessons. While students who feel bored with math lessons are students, who do not have high learning motivation, so from the data can be seen that the majority of students do not have high motivation to learn math.

The statement was supported by several other findings: intrinsic motivation, involvement, and student achievement in their lower secondary school decline in mathematics (Grades 7-10, aged 13-16 years (Wilson and Mack in Chen et al., 2012) Though Singapore secondary students usually perform well in international mathematical assessments (Wilkins in Chen et al., 2012), As far as mathematics is concerned, these students are not free of the psycho-educational factors (such as anxiety and self-doubt) potentially hamper their subsequent involvement and achievement in the subject (Stankov in Chen et al., 2012)

The problem requires a solution to improve student learning motivation, given its significant role in the success of learning (Ozer and Akgun, 2015). In that case, Chernoff, Csikszentmihalyi, Schneider, and Shernoff in Autio (2011) stated that research consistently reveals that motivation is not only to the current academic functioning but also to student's beliefs in their future success as students and their expectation of positive school experiences.

The solution of these problems is to seek out several factors that can influence learning motivation. One of them is to create a learning condition that motivates his learning. As Tohidi and Jabbari (2012) have pointed out, because students are not always motivated internally, sometimes they need to be in a motivating condition, found regarding the environment created by the teacher. Teachers can create it through the selection of appropriate learning models. Learning model that is assumed can improve student's learning motivation is Problem Based Learning (PBL). The assumption was based on Jones's (2006) opinion that PBLs can increase students' motivation to learn by focusing on real learning scenarios.

PBL is learning that results from the work process towards understanding, or solving a problem (Alrahlah, 2016). Problem-Based Learning is a learning model based on the principle of using problems as the starting point of acquisition and integration of new knowledge (Saleh, 2013). Briefly, problem-based learning is a model of learning that presents the actual and contextual problems related to the students' lives to develop their problem-solving skills. The problem-based assumptions of students believe that PBLs have increased their motivation to learn and to improve their learning motivation (Witte and Rogge, 2012; Alrahlah, 2016). Then some empirical studies have examined how PBLs affect students' learning motivation.

This opinion is also supported by the following notice, namely the motivation to operationalize the students' broad interest, which is in demand by environmental stimuli, such as problems or facilitator discussions about interesting facts (Alrahlah, 2016). In addition to attracting students, the presentation of the issues in learning will provide new experiences so that students feel happy when learning. This opinion is supported by the following idea, that PBL is very fun for students and tutors or teachers, and the process requires all students to be involved in the learning process (Alrahlah, 2016). Independent and active learning is believed to

engage students in developing higher self-learning motivations, more variety of learning skills, and better learning outcomes (Witte, and Rogge, 2012)

Based on the description, the researcher took the title of the strategy of improving motivation to learn through problem-based learning. The purpose of this study is to determine the effectiveness of problem-based learning model to enhance student learning motivation. Quantitative methods of quasi-experimental type are used in this study. Based on the formulation of the objectives, it can be assumed that the problem-based learning model is sufficient to improve students' learning motivation. Given some of the advantages that the model has in attracting attention and interest of students to the problem presented. This is one indication of the emergence of student learning motivation.

2 METHODS

This research is a quantitative research of quasi-experimental type with pre-test and post-test design model.

2.1 Hypothesis

The hypothesis proposed in this study is:
- Ho : The null hypothesis is the problem-based learning model is not effective to improve students' learning motivation
- Ha : Effective problem-based learning model to improve students' learning motivation.

This research is expected to be an alternative solution to improve student learning motivation, especially learning at the primary level.

2.2 Setting and Participant

The setting of this research is SDN Ngarum 2 and SDN 1 Masaran which is located in Sragen district of Central Java province. The member of this research is third grades in both of schools. The numbers of participant are 56 students, 26 members from SDN Ngarum 2 and 26 from SDN 1 Masaran. Participant consists of 17 males and 35 females elementary school student.

2.3 Data Collecting and Analysis

Data were collected by using the closed-loop type of questionnaire and participant observation. The questionnaire was developed using attitude by Likert scale. The number of questionnaire items is as much as 40 items and include valid criterion with Cronbach alpha value 0.920. Motivation indicators utilized in the questionnaire include: diligent, tenacious, interest, feeling bored, working independently, defending opinions, confident, interested (Sardiman, 2001).

Data were analyzed by SPSS 17.0 software. Test requirements analysis used is a test of data normality. Test the normality of the data using the Lilliefors formula. The data analysis technique used is non-independent t-test to examine the hypothesis.

3 RESULTS AND DISCUSSION

The results of pre-test and post-test were tested for normality first as a requirement to verify the effectiveness by using the Lilliefors formula, with a significance level of 5%.

Table 1: Normality test of pre-test.

N	Mean	L_{table}	L_{count}
26	118,8846	0,161	0,091

Table 2: Normality test of post-test.

N	Mean	L_{table}	L_{count}
26	126,5	0,161	0,046077

Based on the results of pre-test and post-test normality test, it is known that both tests are normally distributed with $L_{count} < L_{table}$ value in both tests. So it can be assumed that hypothesis testing can be implemented.

Hypothesis testing was performed by non-independent t-test, with a significance level of 5%. The calculation results can be described as follows.

Table 3: Hypothesis test results.

N	Sd	t_{table}	t_{count}
26	14,069	1,708	2,760

According to the table 3, Ho is rejected, and Ha accepted because of $t_{count} > t_{table}$, which means problem-based learning model effectiveness to improve student's learning motivation. The results also explain that problem-based learning is interesting.

Based on the observation results, it appears that students who have low motivation were passive, just discuss with their group and are reluctant to ask the teacher. They provide solutions to problems by their knowledge or previous experience. The interesting thing is low motivation students are not easy to give up and try to complete the task given. Some students who have low learning motivation can solve all problems with longer time. This is contrary to the study of Putra et al. (2016) that the impact from low motivated students is likely to give up when doing difficult tasks easily. They prefer to leave a difficult task rather than solve it. In this case, the teacher is very role as a motivator to the students. Teachers continue to guide and motivate students to continue to work.

Different findings from this study occur because of the interest and curiosity in answer to the problem so that students feel challenged to be able to solve all of these issues. The statement is supported by the results of the following research, that PBLs allow students to be more involved in learning information and store information much better when reinforced in this way. It is fun and exciting, and every week there is a new method used to present information. Students are interested to see what each group thinks and needs to be taught to large groups (Pastirik, 2006).

The emergence of interest in solving the problem is a sign of the appearance of learning motivation from within students. As the following findings indicate that students tend to be intrinsically motivated, if they: address their educational outcomes to factors that are under their control, believe they can be useful agents in achieving the desired goals, are interested in mastering a topic, not just rote learning to attain good grades (Tohidi and Jabbari, 2012).

Highly motivated students tend to provide solutions that are associated with what is known or experienced by theory. Also, students often ask the teacher about the difficulties that arise when solving the problem. Some highly motivated students can solve all problems with a shorter time. When encountering difficulties, some of these students look more active in finding solutions.

Based on the two differences seen from the students who have high motivation and low when finding the solution of the problem, it can be seen that the difference indicates an increase in learning motivation in students (both initially have high and low motivation) when presented learning with problem-based learning. The increase is reported by the emergence of student's passion and interest towards the problem which then actualized with the willingness to find solution problem. The findings are also supported by the following opinions, namely the motivation to operationalize the students' in-depth interests, which are in demand by environmental stimuli, such as problems or facilitator discussions of exciting facts (Alrahlah, 2016).

Then the increase in motivation is also shown by the emergence of diligent and tenacious attitude to face difficulties. This was apparent when some students complain about severe problems, but they still want to try and not easily give up looking for solutions, and all students can provide solutions to problems in a timely fashion despite some inappropriate solution problems.

The results of the hypothesis and observation test explain that the factual and exciting problems and by their cognitive ability can encourage full involvement in solving problems, with this relationship will generate a sense of fun and the emergence of interest which is an indicator of the motivation to learn. As Csikszentmihalyi finds in Fullagar and Mills (2008) that the holistic sensation that people feel when they act with total involvement. This signifies an optimal experience so engrossing and enjoyable that activity becomes viable for its sake without extrinsic motivational motivation (Csikszentmihalyi in Fullagar and Mills, 2008).

The findings are also supported by the opinions of Vallerand et al. in Fullagar and Mills (2008) that motivation to perform an activity because one likes to learn and explore new things and ideas (intrinsic motivation- knowledge). Another type of self-determination of intrinsic motivation is the desire to perform an activity because of the satisfaction derived from completing or creating something (inherent motivation-achievement). This kind of natural motivation is the desire to show an action to experience the sensory stimuli it provides (intrinsic motivation-stimulation). In this motivation, an individual engages in an activity for joy, sensual pleasure, and enjoyment of activity.

This opinion is in line with the indicators of learning motivation proposed by Sardiman (2001), that the signs of learning motivation include: (1) persevering on duty, (2) tenacious facing difficulties, (3) showing interest in various problems, (4) fast boredom on routine tasks, (5) prefer to work independently, (6) can defend his opinion, (7) not quickly let go of things believed, (8) happy to find and solve problem problems. So it can be seen that the achievement of several indicators of learning

motivation (the emergence of perseverance, tenacity, pleasure, interest and happy problem solving) when teachers apply problem-based learning model.

4 CONCLUSIONS

The conclusion of this research is compelling problem-based learning model to improve student's learning motivation. The model provides full opportunities for students in solving problems that are appropriate to their daily life and cognitive level. Total involvement in solving the problem can encourage interest, interest, and excitement to solve the problem, an indicator of learning motivation.

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