Literature Study of Problem Based Learning Model Against Students Mathematical Motivation (Based on Indonesian Language Book)

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ABSTRACT
This study aims to describe whether the Problem Based Learning Model can be used for students' motivation problems in learning mathematics, what kind of motivation is successfully provided by the Problem Based Learning Model and how the Problem Based Learning Model can make students have motivation in learning mathematics. The research method used is the Literature Research Method, by conducting a literature review through books in Indonesian. To maintain the quality of the material being studied, Indonesian language books are often used as references and written by experts (for example professors) which are proven based on tracking activities carried out in various journals, books and from the Higher Education Database (pddikti). Data analysis techniques were carried out in 3 stages, namely: organize, synthesize and identify. The results showed that the Problem Based Learning Model can be used for students' motivation problems in learning mathematics, intrinsic motivation is the type of motivation provided by the Problem Based Learning Model and the Problem Based Learning Model can make students have motivation in learning Mathematics because it is directly associated with the real world, so students feel mathematics is very useful and motivation will emerged.

INTRODUCTION
The notion of mathematics never reaches an agreement or agreement. In other words, there is no agreement about what is meant by mathematics, even by
mathematicians. This is in line with the words of Fathani (2016: 17), where he said that: What is mathematics? Until now there has been no unanimous agreement among mathematicians about what is called mathematics.

Abraham S Lunchins and Edith N Luchins in Erman Suherman (Noer, 2017: 1) said that mathematics can be answered differently depending on when the question is answered, where it is answered, who answers it, and what is considered included in mathematics. From the opinion of Abraham S Lunchins and Edith N Luchins we get that mathematics is different depending on where to answer. That is because every place has certain differences. There is a place that fragrant, smells, clean, cold, hot, and so forth.

If we ask someone who is in a bad place (for example: smell and heat), then that person will answer with whatever is directly passing through his mind (carelessly). This happened because he felt neither happy nor comfortable with the place. It can disturb the person's concentration and even the level of focus.

In addition, it also said depends on who the person answered. Every person is different from one another. It may even be that what other people think we don't necessarily think about or don't know about. That might be because of the environment, education level, etc.

Then it also said that it depends on what is considered included in mathematics. That is because discussions on mathematics are so numerous or broad, even mathematics is related to other knowledge. For example: Statistics, it can be said as mathematics because it has data in the form of numbers, where mathematics is also a number.

Mathematics can be found anywhere, even up to school. Starting from the level of Elementary School, Junior High School to Higher Education. This is in line with what was said by Mulyono Abdurrahman (Zebua, 2020: 12) where mathematics was taught at various levels, from elementary school to university level. This is similar to what was said by Isrok'atun and Rosmala (2019: 42), mathematics is a compulsory subject in schools, starting from elementary school, junior high school, high school and university (PT). Mathematics is sometimes considered as something that is difficult, boring, or scary for students. This becomes a problem in learning mathematics, in addition to other things. So that it encourages Indonesia's achievement to the international level is low. This is evident from Indonesia's achievements based on the results of the Trend in International Mathematics and Science Study (TIMSS) survey and the Program for International Student Assessment (PISA) which is still in the low category. This can be seen in TIMSS, where Indonesia's ranking in 2007 was 36 out of 49 countries, in 2011 Indonesia's ranking was 38 out of 45 countries, and in 2015 Indonesia's ranking was 45 out of 50 countries (Martyanti and Suhartini, 2018: 36). Whereas in PISA (Salim and Prajono, 2018: 595), Indonesia's rank was: in 2000 Indonesia ranked 39 out of 41 participating countries with student scores of 367, Indonesia's 2003 achievement ranked 38 out of 40 countries with a score of 361, in 2006 Indonesia ranked 50 out of 57 countries with a score of 391, in 2009 Indonesia was ranked 61 out of 65 countries with a score of 371, in 2012 Indonesia ranked 64 out of 65 countries with a score of 375, in 2015 Indonesia ranked 63 out of 70 countries with a score of 386.

Problems in learning mathematics can also be found to occur in one of the schools in Indonesia, namely in SMP Negeri 1 Gunungsitoli Utara. Based on the
observations of researchers during the Integrated Field Experience Program (PPLT), it was found that during exams and tests there are sometimes students who cheat, students are less active in learning activities in class and sometimes there are students who do not collect assignments when given. Cheating is not something new or extraordinary, instead it might have become a habit that is done for some people. There have been cases where cheating was done en masse or together. The case occurred during the implementation of the National Examination (UN) in SD Negeri II, Tandes, Surabaya (Abbas, 2019: 7).

While based on the results of interviews with subject teachers, it was found that students have low learning interest, students have difficulty in learning mathematics and sometimes there are students who do not do the assignments given by the teacher. Based on the results of interviews with students, it was found that students do not really like learning mathematics because students have difficulty when learning mathematics. Difficulties occur because of the abstract nature of mathematics, while students' thinking is only in the original condition or the condition that is known directly (real).

From observations during PPLT and interviews (subject teachers and students) above, it can be concluded that students' motivation to learn mathematics is still low. Learning Motivation Indicators according to Lestari and Yudhanegara (2017: 93), namely: a. The existence of encouragement and learning needs, b. Show attention and interest in the tasks given, c. Diligently facing the task, d. Resilient in facing difficulties, and e. The desire and desire to succeed. In point (c) indicators of learning motivation according to Lestari and Yudhanegara, it is clearly proven that students still lack motivation to learn, where students have motivation if diligently facing assignments, while students at SMP Negeri 1 Gunungsitoli Utara sometimes there are those who do not do the assignments given by the teacher (not diligent at all on the assignment).

Then in point (d) indicators of learning motivation according to Lestari and Yudhanegara it is also clear to say that students lack motivation in learning, where if they have motivation to study hard students face difficulties, but in reality students say that they don't particularly like learning mathematics because students have difficulty while studying mathematics. This implies that students give up learning mathematics because mathematics is difficult. So this encourages researchers to look for ways on how to provide that motivation.

The process of resolving motivational problems is done by researchers offering a Problem Based Learning model. Rini (2016: 21) said that the learning model Problem Based Learning is one of the learning models that was able to increase student motivation. Based on the results of research conducted by the Hopeit (2018: 916), it was found that the Problem Based Learning model has a role in increasing students' motivation in learning.

Based on research conducted by Ramlawati, Yunus and Insani (2017: 13), it was found that there is an influence of PBL learning models on student learning motivation on the subject matter of environmental pollution. However, the model is only reviewed by researchers with library research methods, whether the Problem Based Learning Model can be used to motivate students in learning mathematics, what kind of motivation is successfully provided by the Problem Based Learning Model and how the Problem Based Learning Model is can make students have motivation in learning mathematics.

According to Fitrah (2017: 47), where: Problem-based learning has always been a priority of some researchers, especially in the field of mathematics education. In
addition to mathematics, this model is also used or used by researchers in other fields such as physics, chemistry, biology and so on (Fitrah, 2017: 47). So many are researching the learning model. That is the reason of the researchers researching the Problem Based Learning model in literature. But what was studied was only based on Indonesian language books.

From the various descriptions above, the research title can be raised: "Literature Study of Problem Based Learning Model of Student Mathematics Learning Motivation (based on Indonesian Language Books)."

Mathematical motivation can be divided into 3 words, namely: motivation, learning and mathematics. Motivation here in terms of learning motivation, which is then associated with mathematics. Motivation when associated with learning is called Learning Motivation. Learning Motivation is a power, encouragement or strength, both coming from oneself or from outside that encourages students to learn (Lestari and Yudhanegara, 2017: 93).

According to Widiasworo (2017: 41) in his book the problems of students in the class and its solutions, states that: Motivation of learning is the overall driving force within students that gives rise to learning activities, which ensures continuity of learning activities and gives direction to learning activities, so that the goals desired by students can be achieved. From some understanding of Learning Motivation above, it can be concluded that Learning Motivation is the driving force or encouragement of students in learning activities. Learning Motivation can occur before learning, when studying, and after learning.

Mathematics learning motivation is motivation in learning mathematics. Motivation to learn in mathematics is a driving force for students in learning mathematics. Studying mathematics here is learning mathematics which is carried out in various places and situations. Where learning mathematics can be done in the market, at school, at home, and so forth.

The Problem Based Learning (PBL) Learning Model has been known since the time of John Dewey. According to Sujana and Sopandi (2020: 121), PBL is one of the innovative learning models that is suitable for all levels of education and for all lessons. Problem Based Learning (PBL) comes from English, which if in Indonesian is referred to as Problem Based Learning or Problem Based Learning, which is abbreviated as PBM. Besides abbreviated PBM, there is also an abbreviation for PBLM (Problem Based Learning Model).

According to Sujana and Sopandi (2020: 121), PBL is a learning model that makes problems the most important starting point in learning. According to Rusman (2016: 229), One alternative learning model that allows the development of students' thinking skills (reasoning, communication, and connections) in solving problems is Problem Based Learning (abbreviated PBM). So, the PBL learning model is a learning model based on or originating from a particular problem.

Woolfok (Ratumanan, 2015: 253) said that the goals of problem-based learning are: To help students develop flexible knowledge that can be applied to all situations, as opposed to inner knowledge. Inner knowledge is information that is remembered, but rarely applied (Cognition and Technology Group at Vanderbilt [CTFV], 1996; Whitehead, 1992), and To increase self-directed intrinsic motivation, problem solving skills, collaboration, and lifelong learning.
The advantages of Problem Based Learning according to al-Tabany (2014: 68), namely: Students better understand the concepts being taught, because they themselves discovered the concepts. Actively involves solving problems and demanding higher student thinking skills. Knowledge is embedded based on schemata owned by students so that learning is more meaningful. Students can feel the benefits of learning because the problem being solved is directly linked to real life, this can increase students' motivation and interest in the material being studied. Make students more independent and mature, able to inspire and accept the opinions of others, instill positive social attitudes among students, and Conditioning students in group learning that interacts with learners and friends, so that the achievement of students' mastery learning can be expected.

The advantages of Problem Based Learning according to Amir in Gunantara (Isrok'atun and Rosmala, 2019: 49-51), namely: Focus on Meaning, Improving Students' Ability to Initiate, Develop Skills and Knowledge, Development of Interpersonal Skills and Group Dynamics, Development of Self-Motivated Attitudes, The Growth of Student-Facilitator Relations, and The level of learning delivery can be improved.

The advantages of the Problem Based Learning model according to Sujana and Sopandi (2020: 139-141), namely: Can develop or improve critical thinking skills, Can provide active learning, Can develop communication skills, Can develop work skills in groups, Can develop problem solving skills, Gain meaningful learning and knowledge endurance, Have a positive influence on conceptual development and correct students' misconceptions, Can improve self-directed skills, Further increase interest and motivation, Further enhance the ability to ask, and Further enhance the ability to think creatively.

From the several descriptions above, it can be concluded the advantages or advantages of Problem Based Learning, namely: Can increase motivation, Develop skills and abilities, and Improve relationships or individual relationships.

**METHODOLOGY**

This type of research is the Library Research (Library Research). The library research method is included in one type of research method based on the research site (Widiasworo, 2018: 30; Mardalis, 2017: 28). Literature research is a series of studies relating to library data collection methods, or research whose research objects are excavated through various library information (Rakhmawati and Alifia, 2018: 188).

The procedure of the research was based on adaptation from Hamzah (2019: 77-78), namely: Problems, Identification of Problems, Limitation of Problems, Theoretical Basis, Determination of Research Purposes, Data Collection, and Analysis and Interpretation.

Data collection techniques in this study are documentation. The documentation method is a method of collecting data by searching for or digging up data from the literature related to what is intended in the formulation of the problem (Rakhmawati and Alifia, 2018: 188). Data analysis technique Data were analyzed in 3 stages, namely: organize, synthesize and identify. Organizing is the stage where the literature is reviewed first to fit the problem (Richardo, 2016: 119). In this Organize stage, the researcher searches for ideas, goals, and conclusions from several literatures starting from reading abstracts, introductions, methods and discussions as well as classifying.
literature based on certain categories (Richardo, 2016: 119; Martyanti and Suhartini, 2018: 37).

Picture 1: frame of mind
Source adaptation: Hamzah (2019:77-78)

**Synthesize** is the activity of bringing together the entire literature into a summary, which is done by looking for links between the literature (Richardo, 2016: 119). The last stage ... identify which identifies issues of controversy in the literature (Richardo, 2016: 119). According to Richardo (2016: 119), the issue of controversy in question is an issue that is considered very important to peel or analyze, in order to get an interesting writing to read.

Interpretations of data according to L. R. Gay in Hamzah (2019: 85-86) are: Connect the results of the analysis with the theories in the previous chapter, Connect or review the relevant theory with the problem at hand, Extend the results of the analysis by asking questions regarding the relationship, the differences between the results of the analysis, the causes, the implications of the results of the previous analysis, Link findings with personal experience, and Give a critical view of the results of the analysis that has been done.

**RESULT AND DISCUSSION**

The advantages of **Problem Based Learning** according to Amir in Gunantara (Isrok'atun and Rosmala, 2019: 50) in part (e) are: The use of PBL models in learning can develop students' self motivation. According to Ratumanan (2015: 249) it is said
that: *Problem-based learning* (PBL or *problem based instruction* = PBI) is based on the assumption that a puzzle or problem situation that is not strictly defined will stimulate the curiosity of students so that they will be motivated to optimally engage in investigative activities. Woolfok (Ratumanan, 2015: 253) says that the goal of problem based learning is part (b), namely: To increase intrinsic motivation, problem solving skills, collaboration, and *self-directed* lifelong learning. According to Ngalimun, et al., (2018: 119) said that: *Problem Based Learning* model can raise questions such as "what is meant by ....", "why it can happen ....", "how to find out .... and so on, which can make students intrinsic motivation for learning will grow. Advantages of *Problem Based Learning* according to al-Tabany (2014: 68) part (d), namely: Students can feel the benefits of learning because the problem being solved is directly linked to real life, this can increase students' motivation and interest in the material being studied. Rusman (2016: 232) says that: PBM optimizes goals, needs, motivations that direct a learning process that designs various kinds of problem solving cognition. According to Abd-El- Hay and abd-Allah in Sujana and Sopandi (2020: 121) said that: PBL is also defined as a motivational, challenging, and fun learning model that has resulted from the process of working towards understanding problem solving. Based on research conducted by Becerra-Labra, Gras-Marti and Torregrosa in Sujana and Sopandi (2020: 140) whose results show that: problem-based learning not only increases the ability to solve problems in conceptual learning, but also increases student interest and motivation. According to Nurdyansyah and Fahyuni (2016: 94), namely: PBM is a way to take advantage of problems to cause motivation to learn. Advantages of learning model *Problem Based Learning* according to Sujana and Sopandi (2020: 140) points to (i), namely: further increase interest and motivation.

Based on some of the opinions above, it can be concluded: The Problem Based Learning Model can be used to problem students' motivation in learning mathematics. The type of motivation is intrinsic motivation.

In addition to motivation, based on some of the opinions above the Problem Based Learning (PBL) learning model can also affect self-directed problem solving skills, collaboration, and lifelong learning, student interest in the material being studied, and student interest in teaching and learning activities.

The steps of the Problem Based Learning model are: The teacher gives problems to students, Students discuss the problems that have been given by the teacher, Students find solutions to problems by reading books, searching the internet, and so forth, Students get back together to discuss the solutions that have been found from various sources, Students display all the things that have been discussed in front of the class to other groups, and Draw conclusions together.

Every thing has steps or stages, so does the Problem Based Learning (PBL) learning model. Problem Based Learning (PBL) Learning Model if interpreted in Indonesian means problem based learning. So, the Problem Based Learning (PBL) learning model is composed of 3 words, namely: learning, bases, and problems. According to the Big Indonesian Dictionary (KBBI) that basis is principle or basis. In the KBBI it can be interpreted that the basis is the basis. The basis is something that is the cause or background for something to happen. The basis of the learning model Problem Based Learning (PBL) is a problem in everyday life. So that learning and teaching activities are more meaningful or lively.
There are so many who state the steps of the Problem Based Learning (PBL) learning model, where there are those who say that starting with learning objectives, attracting the attention of students, and assessing initial knowledge. Indeed, in learning activities teachers must explain what is the purpose of each learning that will be done. So that in his heart students will not wonder why he learns every meeting. What will be the benefits or what they will get after the learning activities are done.

However, when viewed from the words forming or compiler Problem Based Learning (PBL) in the Indonesian language, no learning objectives were found. Instead, there are problems, bases and learning, in other words learning based on problems. So that Problem Based Learning (PBL) starts or is based on a problem. The problem given is a problem in daily life. After the teacher tells the problem, then the next step is students discuss the problem. Students discuss what they are going to do or where they will get resources to solve the problems given by the teacher.

The next stage enters the stage where students look for solutions to these problems. Whether it's by reading books, newspapers, searching the internet, and so forth. Students at this stage seek individually or individually. The fourth stage (4th) is re-discussion. At this stage, students gather again or express to each other what they have found from the sources they have found. In this discussion, each student is given time to explain or tell what they have found to their friends.

At this stage, the teacher helps students or together with students, who knows students have certain difficulties. So it is hoped that there will also be communication not only between students in one group, but students in a group with their teacher. The fifth stage (5th) is to display the results of the discussion. At this stage student representatives from each group present before all groups what they have found. Representatives who present because they are based on the results of group discussions. So that it is felt no longer needed by every student, also to save time.

At this stage, the teacher participates in rectifying whether there is a student's understanding that is wrong or incorrect. The last stage (stage 6) is drawing conclusions. At this stage conclusions can be drawn from what has been learned at the meeting. From the description above, students will be motivated because it is directly linked to real life. Where students feel the benefits directly from learning mathematics or from mathematics.

CONCLUSION

From this study, it can be concluded that: The Problem Based Learning Model can be used to motivate students to learn mathematics, intrinsic motivation is a type of motivation provided by the Problem Based Learning Model, and the last is the Problem Based Learning Model can make students have motivation in Learning Mathematics because it is directly linked to the real world, so students feel mathematics is very useful and motivation will emerge. Based on conclusion of research a lot of suggestions from this research are: (1) The School Principals: are suggested to provide suggestions for
teachers to use the Problem Based Learning learning model in the mathematics learning process, (2) Teachers are suggested to use the Problem Based Learning learning model in the process of learning mathematics and (3) For researchers: so that the Problem Based Learning model is used for motivational problems in learning mathematics and further research needs to be done on other variables.

REFERENCES


