

# Profile of Self Efficacy Mathematics Junior High School Students YLPI Pekanbaru

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**Abstract.** The purpose of this study is to see the profile of Self Efficacy mathematics junior high school students YLPI Pekanbaru. Type of research is quantitative research. Research conducted at SMP YLPI Pekanbaru in the second semester of the academic year 2015/2016. The sampling technique in this study by purposive sampling so that the sample used was grade VIII1 and graders VIII2. The instruments in this study is a sheet questionnaire Self Efficacy and sheet problems solving mathematical problems. Data collection technique is a technique questionnaire, test problem solving mathematical, participatory observation and documentation. Analysis is conducted analysis of the questionnaire Self Efficacy. The data analysis is conducted: 1) The profile analyzes Self Efficacy math students in the classical style; 2) The profile analyzes Self Efficacy mathematics students for each dimension; 3) The profile analyzes Self Efficacy mathematics students for each indicator. The results showed that: 1) profiles Self Efficacy math students in the classical style in medium category; 2) profiles Self Efficacy mathematics students for each dimension medium category as well. In profile analyzes Self Efficacy this math, the average score obtained the highest is the dimension-1 is about beliefs about mathematics with a score of 107.17, while the average score is lowest-dimensional-4 is about beliefs about learning mathematics with a score 101.89; 3) profiles Self Efficacy mathematics students for each indicator is obtained there are four indicators that scores the average high and 5 indicators that get an average score that low. Based on the results of research and discussion can be concluded that the Self Efficacy mathematics junior high school students YLPI needs to be improved.

## INTRODUCTION

In addition to cognitive factors, other factors that affect a person's success in the learning process is affective factors. Affective factors relate about emotions or feelings that each person has. The affective factor needs to be taken in support of the success in the learning process. A teacher needs to understand the affective development in their students that aims to provide the appropriate stimulation student needs because every human being is unique and has a different emotion. According Risnanosanti (2010) there are three affective factors that can affect students' mathematics learning process, namely: beliefs, attitudes and emotions. Confidence factor is the psychological aspect which is also called the Self Efficacy. Bandura (in Heslin & Klehe 2006) defines Self efficacy is the belief a person to himself or the ability to accomplish specific tasks. Self Efficacy is one important factor in determining a person's math achievement (Wilson & Janes, 2008).

Importance of Self Efficacy someone will influence the success of students in the learning process. Heslin & Klehe (2006) stated that "when a person learns a complex task, Self Efficacy can increase the person's ability to gather relevant information, make decisions, and taking actions that should be, particularly when they are in distress. Instead, a person's lack of Self Efficacy can cause analytical thinking process that is in dig irregular quality problem solving is a basic competency in improving the knowledge based society. This is in line with the views Bandura (in Wilson & Janes, 2008) that the Self Efficacy can increase achievement, believe in the ability, develop internal motivation, and allows students to obtain a challenging goal. Negative feelings towards Self Efficacy can cause students to avoid the challenge, do something with the weak, the focus of the barriers, and lack prepare for good results. Therefore, it is necessary Self Efficacy high in students to be successful in the learning process. Self Efficacy can be enhanced or developed, but first need to know a person's level of self-confidence.

Based on the results of research experience in teaching prospective teachers of mathematics, there are some mathematical problems that affect Self Efficacy in solving mathematical problems, namely: (1) the completion of

which was obtained not an integer, for example in the form of fractions or decimals. These solutions lead to students not sure of the correct answer even though the results of the settlement, (2) the type of problem that is given is not regular and student issues are not accustomed to solve it. Often students are faced with problem just routine. So when dealing with non-routine problems, likely would affect the Self Efficacy mathematics, (3) the completion of which is too long. When the settlement obtained are relatively short, the level of math students Self Efficacy high, and vice versa, (4) types of problems such as problem analysis require deep thinking to solve them. Type a matter which is not a matter that is a matter of analysis, will affect Self Efficacy mathematics, (5) the problem is the open issue that gives the impression that solution uncertain, and (6) students are often seen not to have confidence in solving mathematical problems. It can be seen from the student's reaction or response when dealing with the matter. Before doing the thinking process itself with its ability, students tend to see her friend to the left and to the right as if to ask for help in solving mathematical problems. This is suspected as a manifestation of a lack of confidence (Self Efficacy) in mathematics.

According to research Pajares and Miller (in Annisa, 2014) says that the Self Efficacy towards mathematics in students to contribute in predicting their performance in solving a mathematical problem. It can be concluded students with Self Efficacy high will have the cognitive abilities nice could have an impact on a great learning achievement.

Based on several factors suspected to affect students and the importance of Self Efficacy Self Efficacy to solve the problem mathematically, it is considered important to know the profile of confidence (Self Efficacy) math students in order to lower initial handling Self Efficacy math students.

#### Research Question

1. What is the profile Self Efficacy YLPI Pekanbaru mathematics junior high school students?
2. Problems of mathematics such as what can be facilitated Self Efficacy math students can develop?

## RESEARCH METHODOLOGY

Type of research is quantitative research. This research was conducted in SMP YLPI in Pekanbaru. Time research done on the second semester of the academic year 2016/2017. The population used in this study are all junior high school students in the province of Riau. The sample used in this study were all eighth grade students in junior YLPI Pekanbaru. This study uses a mathematical variables: Self Efficacy junior high school students and is focused on Self Efficacy when students solve problems of mathematical problem solving.

The research instrument used was a questionnaire sheet Self Efficacy towards mathematics, and sheet problems of mathematical problem solving. Sheets Self Efficacy questionnaire aims to determine students' self efficacy or beliefs about mathematics. Confidence in this study includes four main sources as disclosed by Bandura namely: performance accomplishments, vicarious experience, verbal persuasion, emotional arousal. In this study, using the format of the response of a Likert scale of Self Efficacy and there are 33 items statements with four possible answers. Problems solving mathematical problems used when doing observations so that researchers can directly observe how the students' responses when solving the mathematical problem solving.

Data collection techniques are triangulated namely: questionnaires engineering, test engineering problem solving mathematical problems, participatory observation technique, documentation. Data analysis technique used is the analysis of qualitative data and quantitative data analysis. Qualitative data analysis conducted qualitative description obtained from the observation of the activities of the students do problem solving and fill out a questionnaire Self Efficacy math students. Analysis of quantitative data obtained from the questionnaire is the scale Self Efficacy math students.

## RESULT AND DISCUSSIONS

### 1. Analysis Student's Profile of Mathematics Self Efficacy in Classical

Analysis of Self Efficacy in the classical profile of this to see how the students' self confidence for both classes studied. The recapitulation of the data presented in Table 6 below:

Table 1. Student's Profil of Mathematic *Self Efficacy*

Category	Class	
	VIII <sub>1</sub>	VIII <sub>2</sub>
High	1	-
Middle	16	19
Low	1	-

Based on Table 1 Self Efficacy known that the profile of students in the classical middle category, only one person who has Self Efficacy students in the high category, it means that students have the confidence that has not been good. This indicates that the student has the academic ability just that sometimes students are still hesitant in the use of mathematical formulas and concepts that exist. This condition is seen from two classes used as samples show the same result.

## 2. Analysis Student's Profile of Mathematics Self Efficacy in Each Dimension

In this study there was a 4-dimensional Self Efficacy used to see the confidence of students towards mathematics. In Table 7 below presents ways Efficacy Math Students Self profile for each dimension measured.

Table 2. Student's Profile of Mathematics Self Efficacy in Each Dimention

No	Dimensions	Average Score	Category
1.	Efficacy about mathematics	107,17	Middle
2.	Self Efficacy in Mathematics	105,69	Middle
3.	Efficacy about teaching mathematics	103,80	Middle
4.	Efficacy about learning mathematics	101,89	Middle

Based on Table 2 in mind that for the fourth dimension in middle category with an average score that was not much different. The average score of the highest dimension of beliefs about mathematics and the lowest scoring average the dimensions of beliefs about learning mathematics. Therefore, there is no protruding dimension dominated by students.

### 3. Analisis Student's Profil of Mathematics Self Efficacy in Each Indicator

Here presented data on efficacy profile Self-indicator mathematics based indicators for each dimension Self Efficacy was measured.

#### a. Dimension-1 SE: Efficacy about Mathematics

In dimension-1 this *Self Efficacy* consist of 3 indicators. The result for each indicators can see from this table:

Table 3. Student's Profil of Mathematics *Self Efficacy* in Efficacy about Mathematics dimension

No	Indicator	Score	Average per Indicator	Category	Overall Average	Overall Category
1.	Feel interested in mathematics	219	109,5	Middle	107,17	Middle
2.	Feeling optimistic in answering math assignment	321	107	Middle		
3.	Feel confident to undertake and complete the math assignment	103	103	Middle		

Based on Table 3 for each indicator dimension of beliefs about mathematics in middle category. Likewise, the overall indicator. This shows that students do not yet have good confidence about mathematics.

#### b. Dimensi-2 SE: Self Efficacy in Mathematics

On-dimensional 2 Self Efficacy there are 8 indicators. Recapitulation of data for each indicator can be seen in Table 4 below.

Based on Table 4. It is known that there are two indicators on the dimension of self confidence in mathematics belonging to a higher category that is an indicator of work done to improve performance with both indicator has a positive purpose in doing things. While six other indicators moderate. Thus, the overall dimensions of confidence in mathematics were moderate, which means students also do not have good self confidence in mathematics .:

Table 4. Student's Profil *Self Efficacy* of Self Efficacy in Mathematics Dimension

No	Indicator	Score	Average per Item	Category	Overall Average	Category
1.	Stepping up efforts to complete the math assignment	290	104,5	Middle	105,69	Middle
2.	Committed to completing mathematical tasks given	214	107	Middle		
3.	Seeing a difficult mathematical task as a challenge	88	88	Middle		
4.	The work done to improve the performance of well	238	119	High		
5.	Believe and know the advantages of the	192	96	Middle		
6.	Persistence in solving a math assignment	104	104	Middle		
7.	A positive goal of doing things	134	134	High		
8.	Have a good motivation for the development of mathematical skills	195	97,5	Middle		

### c. Dimensi-3 SE: Keyakinan tentang Pengajaran Matematika

In the 3-dimensional Self Efficacy there are three indicators. The results of calculations for each indicator can be seen in Table 10 below:

Table 5. Student's Profil Mathematics *Self Efficacy* about Teaching Mathematics Dimension

No	Indicator	Score	Average per item	Category	Overall average	Category
1.	Addressing the diverse circumstances in a way that is good and positive	102	102	Middle	103,80	Middle
2.	Responding positively to the teaching of mathematics	185	92,5	Middle		
3.	Making teaching and experience life as a path to success	232	116	Middle		

Based on Table 5. It is known that for the third indicator being categorized. This indicates that the student has not had a good confidence on teaching mathematics with an average per item were not so far away.

### d. Dimension 4 SE: Efficacy about Learning Mathematics

On-dimensional Self Efficacy there are five indicators. Recapitulation of data for each indicator can be seen in Table 4 below:

Table 6. Student's Profil Mathematics *Self Efficacy* about Learning Mathematics Dimension

No	Indikator	Score	Average per Item	Category	Overall Average	Category
1.	Guided by previous learning experience	122	122	High	101,89	Middle
2.	Minded optimist in lessons and assignments	204	102	Middle		
3.	Develop ability and achievement	203	101,5	Middle		
4.	Make a plan to complete the task	205	102,5	Middle		
5.	Learning according to the schedule set	183	91,5	Middle		

Based on Table 6 in mind that only one indicator of high category is an indicator based on the experience of previous learning. Meanwhile, four were categorized indicator. This indicates that the student has not had a good ability of learning mathematics.

Basically students have good mathematical skills just not sure what the concepts that will be used in accordance with the intention of matter. So often students ask researchers about the intentions matter. To foster confidence in students, researchers tried to do the first step by providing an explanation of the additions mean matter. When given additional information is received, almost the majority of students were able to resolve a given problem. Another factor that led to the confidence of students is not well developed due to the given problem

is a matter of solving the problem. Allegedly students unfamiliar with the types of problems like that. Students familiar with the matter who comes with complete information in problem solving. So when given a problem that the real numbers are not given, students are difficult to model it, and at the end students are not convinced with the first steps that will be used to resolve the matter.

Another picture indicating that the confidence of students not yet well developed is often asked fellow students to determine whether they will use the idea is right. Yet another student who also could not give a definite answer because they also do not have good self confidence.

Of the three problem solving a given problem, just a matter of which as a whole could be completed by the student. Even then, after being given additional information by researchers. Though the beginning of the matter to determine the mathematical problem of how to facilitate the students' self confidence flourish. Based on the answers of students, researchers could not draw definitive conclusions because most students are not able to resolve the matter of solving a given problem. The given problem look familiar to students. So that students are not sure what steps would be used to settle the matter. However, students try to solve it by using logic and understanding of each of them. Factors causes of why students do not yet have good self confidence, yet the researchers followed up in depth because no in-depth interviews conducted by the researchers to obtain such information. However, do not rule out in-depth interviews to do after this.

Self Efficacy of four dimensions, dimensions beliefs about mathematics is the best dimensions owned by students. This dimension includes the indicator was interested in the field of matematika, feel optimistic in answering mathematical tasks, and feel confident to perform and complete the math assignment. Of the three indicators is known that students' interest in mathematics, just that students are not sure to be able to complete the task given math. Basically, when students already have an interest in mathematics, the students can be directed to complete the math problems are given. Of course, with the assistance of teachers so that the students' self confidence can thrive. Dimensions of Self Efficacy lowest score obtained by the students are beliefs about learning mathematics. Beliefs about learning mathematics include indicators based on the experience of previous learning, optimistic view in the lessons and assignments, develop skills and achievements, make plans to complete the task, and learning according to the schedule set. To develop the ability and achievement indicators is categorized low score among the five indicators in this dimension. It is presumed the students are reluctant to think too deeply about the ideas they have. If the terms of indicators, four indicators are relatively high that the effort made to improve the performance of a well (2nd Dimension), has a positive purpose in doing things (2nd Dimension), making teaching and experience life as a success (dimension 3), based on the previous learning experience (4th dimension).

Five of the following indicators earned an average score below 100, which is to see the task difficult mathematical challenge (dimension 2 with a score of 88), believe and know the advantages of (dimension 2 with a score of 96), have a good motivation for the development of mathematical skills (dimension 2 with a score of 97.5), respond positively to the teaching of mathematics (dimension 3 with a score of 92.6), and learn the schedule that is set (4th dimension with a score of 91.5). From the observations of researchers, the indicators obtained the lowest score is in accordance with what we observed when students do the problem solving a given problem. When viewing a difficult mathematical task most students are not serious, none of them said, "because hard-bu". To believe and know the advantages they have, the results of Observers

## CONCLUSIONS

1. Profile of Self Efficacy students medium category.
2. The mathematical problem that can facilitate Self Efficacy mathematics in order to further develop the students can not seemingly in the preliminary study, further research needs to be done.

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