

Students' Self Efficacy Profile In Physics Learning Through Level, Strength And Generalitation Dimensions

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Abstract: This qualitative research aims to find out the self efficacy profile of 10th grade students in SMAN Banda Aceh in physics learning. The sample of this study were 103 students from the total population of 213 students. This research used questionnaire and interview technique. The questionnaires used are based on the efficacy indicator consisting of level, strength, and generalitation dimension. The data in this research was analysed using descriptive statistic with percentage method. The results of the study showed that self efficacy on the magnitude dimension has a percentage of students equal to 53,40% categorized into the medium category, in strength dimension, it has percentage of student equal to 62,14% classified into medium category, and in generalitation dimension, it has percentage of students equal to 61,17% classed into medium category. Therefore, it can be concluded that the students' self efficacy in physics subject is moderate.

Keywords: self efficacy, level, strength, generalitation

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I. Introduction

Physics is a subject that not only requires students to master mathematics, but also requires students to be able to master and understand the physics concepts in which this results in physics is considered as one of the difficult subjects for students [1]. The assumption may influence the teaching and learning process.

Students who have difficulty in understanding a subject tend to lack of motivation and are lazy to accomplish tasks, to ask questions and to learn. The condition are likely to occur in subjects dealing with numbers [2]. One of the steps teachers can take to avoid students' learning difficulties is to implement students' self efficacy

Self efficacy is a belief that a person has in someone's ability to achieve a certain goal reflected through optimism, achievement motivation, and ability to deal with task and effort for self-development [2]. Self efficacy affects students' choice of activities, goals, and endeavors in classroom activities. The higher self efficacy, the higher students' achievement, and the lower self efficacy, the lower students' learning achievement [3]. So, self efficacy affects students' learning and achievement.

Every students has different self efficacy. This is because self efficacy has dimensions that include different *levels*, *strength* and *generality* for each person. The *level* dimension is the difficulty in understanding learning materials, answering questions, etc, the *strenght* dimension is students' strength and weaknesses in recognizing their own ability in mastering subjects, answering questions, etc, and the *generality* dimension consists of students' belief in dealing with any situation and condition ranging from usual activities or specific situations that has never been experienced in experiencing schoolwork, either through cognitive and affective behaviors [4].

It has been studied previously by Febrina Handayani in 2013 about the relationship of self efficacy toward the learning achievement of acceleration students. It is found that there is a positive correlation between the efficacy and students' learning achievement in which the higher students' self-efficacy, the higher student's learning achievement, and the lower students' self efficacy, the lower student's learning achievement. There are also studies conducted by Putri Dwi Sundari in 2016 on the relationship between self efficacy and students' critical thinking skills. The result showed that the development of students' self efficacy is needed to support the development of students' critical thinking skills through the application of strategies or learning methods.

Moreover, other researchers also participated in conducting research on this self-efficacy. Elfira Dwi Candra in 2017 also examined the influence of self efficacy and infrastructure facilities on students' learning outcomes in the subjects of Administration Transaction class XII Marketing SMK Negeri 4 Surabaya. The result indicated that self efficacy does not affect the students' learning outcomes as well as the facilities and infrastructures.

Based on previous studies, the researchers are interested to participate in this self-efficacy study in which the researchears aim to find out students' self efficacy profiles in physics subject analysed through

dimension *level*, *strengh*, and *generalitative*. The purpose of this study is to examine self efficacy profile of 10th grade students at SMAN Banda Aceh in Physics Learning

II. Methodology

This research was conducted at SMAN 3 Banda Aceh in Aceh Province, on July 20 to August 20, 2017. The type of research used in this study is descriptive research using qualitative methods. The population of this study were 10th graders of 7 Class. Samples were taken randomly in which 103 out of 213 students were chosen. The data were collected through questionnaires and interviews.

The indicators of the questionnaire used in this study has dimensions as shown in the following table:

Table 1 The indicators of self efficacy assessment in each dimension

| Dimensions | Indicators |
|----------------|--|
| Level | Self confidence in ability in: a. understanding materials b. answering questions c. accomplishing tasks d. learning lab |
| Strength | Strong confidence in self potency in: a. Understanding materials b. Answering questions c. Accomplishing tasks d. Learning lab |
| Generalitation | Dealing with failurs |
| | Connecting experiences with the same tasks and goals in the present |
| | Dealing with previous success |

(Source : Hairida, 2017)

While the indicator of the interview used in this study is as indicated in table 2 below.

Table 2. Interview Questions Lists

| No | Questions |
|----|---|
| 1 | What causes you have low motivation in learning? and how to deal with difficult questions? |
| 2 | What do you do when you get a low score? |
| 3 | How many hours do you study every day at home, and how do you do the tasks assigned by the teacher? |
| 4 | Have you ever targeted your test scores? Why do you do that? |

Each question is given a score of 1 to 4, where the highest score is 4 and the lowest is 1. Questionnaire and interview data in this research will be analysed using descriptive statistic with percentage method as mentioned in Sudijono (2011), as follows:

$$P = \frac{f}{N} \times 100\%$$

P = Percentage searched

f = Frequency of student self efficacy condition

N = Number of samples used

III. Result And Discussion

The finding of the reseach results in two types of data: questionnaires and interviews.

Data obtained from the questionnaire is as indicated in table 1:

Table 3. Description of Students' Self Efficacy in Physics Learning According to Dimension

| Category | Dimension | | |
|------------|------------------|-----------------|-----------------------|
| | <i>Magnitude</i> | <i>Strength</i> | <i>Generalitation</i> |
| Low (%) | 38,83 | 7,77 | 5,83 |
| Medium (%) | 53,40 | 62,14 | 61,17 |
| High (%) | 6,80 | 29,13 | 32,04 |

Source : SMAN 3 Banda Aceh, 2017 (analysed)

If the data is described in the form of diagrams, it is as presented in the following chart:

Diagram 1. Self-Efficacy Picture Based on *Magnitude* Dimension

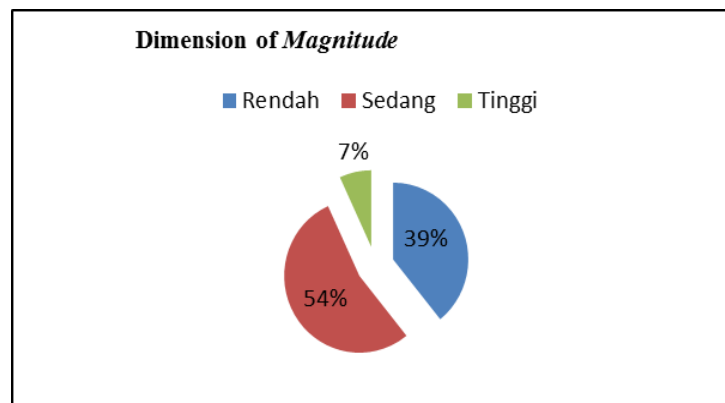


Diagram.2 Self-Efficacy Picture Based on *Strength* Dimension

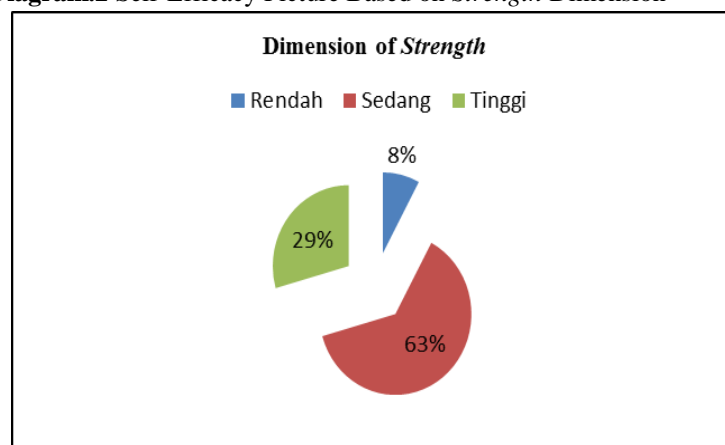
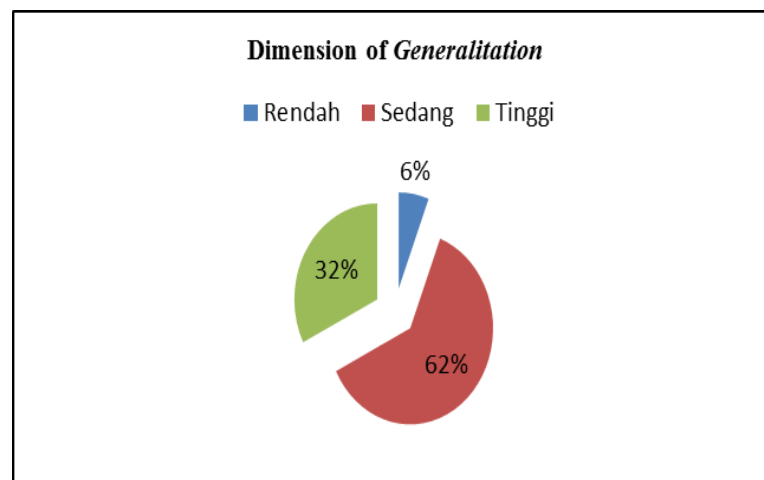


Diagram.3 Self-Efficacy Picture Based on *Generalitation* Dimension



From the three dimensions above, self efficacy in the *magnitude* dimension has a percentage of 53.40% of students classified into medium category, in *strength* dimension, it has percentage of students equal to 62,14% categorized into medium category, and in *generalitation* dimension it has percentage of students equal to 61,17% classed into medium category.

In addition to the questionnaires data as previously described, researchers also obtained data from interviews. The data is the students' answers used for interview samples that is students with the lowest questionnaire scores (SER) and students with the highest questionnaire scores (SET).

Students' interview answers related to *magnitude* dimension question about the difficulty level of a task and the choice of their activity is that they prefer to ask their friends (cheating). Moreover, regarding the

dimension of *generalitation* about the experiences experienced by students both success and failure and how students deal with the experience is that they choose to take remedial to teachers of related fields. Similarly, the *strength* dimension about students' confidence toward their ability is that they target the scores they want to achieve in the exam.

This is in accordance with previous research conducted by Rohmah in 2016 about students' self-efficacy profile of grade X of SMAN Ploso on the application of learning model of elasticity material concept. The study found that overall the *magnitude* dimension obtained 69.70% included as high category, while the strength dimension of 71.60% with the high category. This shows that there is a balance between the students' questionnaire answers and the interview results.

IV. Conclusion

Based on the results of this study, it can be concluded that the self efficacy profile of students in physics learning through dimension level, strength and generalitation are moderate.

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