On surveying of fifth grade mathematical anxiety in term of gender

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Abstract. In the education curriculum, mathematics is a compulsory subject that students must learn from elementary school, because of its usefulness for students' daily lives. However, many obstacles experienced by students in learning mathematics, one of which is mathematical anxiety. So, this study aims to explain how students' mathematical anxiety is seen from gender factors and their implications. The subjects of this study were 10 grade 5 students, an elementary school in Sumedang. Case study methods are used to understand and analyse students' mathematical anxiety. The results of the study were obtained from data collected through questionnaires, interviews, and fieldnotes when the mathematics learning process took place, which was then analysed descriptively. During the study, it was observed that the mathematical anxiety of female students tended to be higher when compared to male students. This mathematical anxiety will increase when students face an exam. The implication is that students with high levels of mathematical anxiety tend to be disturbed by their concentration in learning mathematical material. Although this does not all have an impact on the results of student learning tests, but still must be improved in learning situations so that students are more comfortable and mathematical anxiety is more reduced students in following the lesson.

1. Introduction

Learning activities in schools have various subjects taught, one of which is mathematics. Mathematics subjects are very important to teach since elementary school. Because the concepts in mathematics subjects are continuous, so that as early as possible students must have the ability to master the basic concepts of mathematics.

But, in fact, in classroom learning the phenomenon of anxiety when learning always occurs in every student, including students - elementary school students and can experience excessive anxiety when facing lessons that the level of difficulty above the ability of students, especially when faced with mathematics learning including many students who experience anxiety and some even experience stress due to learning mathematics. This clearly has a big impact on the learning outcomes of mathematics. There is no denying that many mathematical values are below the Minimum Completion Criteria (KKM).

Mathematical anxiety has a negative effect on mathematics learning outcomes, where the higher the level of anxiety, the lower the mathematics learning outcomes, and vice versa [1]. Sari (2017) suggest the meaning of anxiety "An unpleasant feeling that has psychological and behavioral concomitants and that is experienced in formal testing or other evaluative situations" [2]. Mathematical anxiety is a negative cognitive reaction from someone when faced with learning mathematics [3]. Indicators of
learning anxiety include four components, namely: (1) Mood, characterized by feelings of tension, anxiety, worry, fear, and nervousness. (2) Motoric, characterized by motor tension / movement, such as trembling and hurrying. (3) Cognitive, characterized by feeling difficult to concentrate, or unable to make decisions. (4) Somatic, characterized by disturbances in the heart, such as rapid pounding and easy sweating of the hands.

Anxiety can be influenced by several factors, namely age, gender, health status, experience and the size of the stressor [2]. Gender differences in dealing with anxiety, especially anxiety in evaluation / exams, show that women have a higher level of anxiety than the level of anxiety in men [4]. This shows that women have a higher emotional level than men. In line with that, women tend to experience anxiety twice as often as men [2]. This is because hormones in women bring out empathy faster. In addition, women have a more active level of 'error-related negativity' than men, so women are more afraid to err and more sensitive to situations that they think are wrong. Whereas, women are more anxious about their inability when compared to men, men are more active and explorative, while women are more sensitive [5].

Based on the opinion above, each student has anxiety, and the level of anxiety of male and female students is different. The author intends to conduct research on gender factors to obtain a comprehensive picture of students' mathematical anxiety in terms of gender factors. Because most opinions also mention that mathematical anxiety of female students is higher than male students.

2. Method
This study aims to explain how students' mathematical anxiety is seen from gender factors and their implications. The subjects of this study were 10 grade 5 elementary school students in Sumedang. During this research, case study methods were used to understand and analyze students' mathematical anxiety when facing mathematical tests. During the research process data will be collected through questionnaires, interviews, field notes and test instruments which are then analyzed descriptively to determine the results of the study.

3. Result and Discussion
Data about students' mathematical anxiety was obtained from the taking directly by using questionnaires and interviews. While data about learning outcomes are requested directly from the teacher. Questionnaires were distributed to each student with 12 statements. After being given a questionnaire regarding mathematical anxiety which consists of 4 indicators, namely (1) mood, which is characterized by tension, anxiety, fear and nervousness, male students tend to be better in mood than female students. The interview results of each student and female students were more afraid than male students even though not all male students had a good mood too. (2) motoric, which is characterized by motor tension / movement, such as trembling and hurry, from the results of student questionnaires that male students sometimes experience disturbances in their motoric aspects while female students always feel disturbances in the inner motor aspects himself and that as proof that he was experiencing mathematical anxiety. The results of interviews with all students were also in accordance with what was obtained from the results of questionnaires filled out by students namely when faced with mathematics subjects, especially if students were asked and asked to work on math problems in front of the class. (3) Cognitive, which is characterized by a feeling of difficulty concentrating or not being able to make decisions, from the results of questionnaires and interviews with students, sometimes male students feel disturbances in these aspects, and female students always feel disturbances in those aspects when mathematics. (4) Somatic, characterized by disturbances in the heart, such as rapid pounding and easy sweating of the hands. In this aspect male students feel it more often than female students; even female students almost never feel it.

From the results of the math ability test, female students were more likely to get higher scores than male students, even though the level of mathematical anxiety of female students was higher. This can be said that female students better prepare their understanding to face math subjects than male students who tend to be more relaxed, the data is in accordance with the results of observations during learning, although female students have a higher level of anxiety, but female students are more prepared with
subject matter he mastered. The results of interviews with students who did not work on the problems they faced were almost the same because they forgot about the subject matter.

Based on the data obtained from the results of the study, female students had higher levels of mathematical anxiety than male students, but this did not all have an impact on the results of student ability tests, because not all female students with higher mathematical anxiety scores under the KKM and not all male students who have lower levels of mathematical anxiety than female students score above KKM. This may be a new finding, the level of mathematical anxiety of male students is higher than that of female students in accordance with the description of mathematical anxiety that has been described above, but not all of them have an effect on the results of students' mathematical ability tests.

4. Conclusion
Based on the analysis of research data, the results obtained are students with high mathematical abilities experience a level of mathematical anxiety that tends to be low, according to data from observations, questionnaires and interviews conducted with students, both male and female students. Students with low mathematical abilities, seen from the results of observations, questionnaires, and interviews conducted, tend to have a high level of anxiety, because students tend to be afraid of being wrong when given a math problem.

The level of mathematical anxiety of female students is higher than the anxiety level of male students, so female students are more likely to feel burdened when they are in mathematics or faced with a math test. This will have a negative impact on students' academic understanding, although not all of them have an effect on the results of students' ability tests, improvements must be made so that students' mathematical anxiety is reduced in students, one of them in learning situations.

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