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## Analysis the Level Anxiety of Students in Dealing with National Exam on Mathematics Subjects

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### Abstract

This research is a descriptive research that aims to find out how the picture of anxiety level of students in facing national exam (UN) on mathematics subjects. The population in this research is all 6th grade students of Budi Rahayu in the even semester of Lesson Year 2016/2017. The sample in this research is the students of grade 6 A and the students of grade 6 B which are totally 80 students. Research data collection using a questionnaire adapted from the Hamilton Anxiety Rating Scale (HARS) and interviews. From the results of data collection, 65 students obtained a score  $\geq 31$  were based HARS included in the category of very high levels of anxiety, and 15 students obtained a score between 25-30 were included in the category of high levels of anxiety. There are 7 items of questionnaire instrument that are over 50% percentage of item number 1 (95%), 2 (80%), 5 (67%), 7 (78%), 9 (67%), 10 (62%), 13 (70%). Based on the results of research and discussion, it is concluded that the anxiety level of students Budi Rahayu in facing the UN on mathematics subjects included in the category of anxiety level is very high, which in this study results are influenced by several factors namely the fear of a large student On the inability to answer questions of mathematics subjects in the UN and the time of implementation of the UN is not long anymore.

**Keywords:** student anxiety; mathematics; elementary school; the national exam.

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## **1. Introduction**

State of Indonesia is one country that has a very large and diverse human resources. According to [1] the development of human resources has an important role in the productivity and growth of a country so that the declining quality of education will have a negative impact on moral sustainability, citizenship, culture and economy of a country. One way that the government to improve the quality of human resources is through education.

An achievement of educational goals can be known through one form of evaluation that is by holding an exam. In the regulation of the minister of education and culture of the republic of Indonesia number 3 of 2017 [2], on the assessment of learning outcomes by the government and the assessment of learning outcomes by educational units, that in order to improve the quality of assessment by government and educational unit and encourage the achievement of national graduate competency standards need to hold national examinations, National school exam and exam. Article 1 (4) states that the UN is an activity of measuring the achievement of graduate competency in certain subjects nationally with reference to Graduates Competency Standards. And in article 5 (1) it is mentioned that every learner on a formal path must follow at least 1 (one) time UN, US, USBN

One of the subjects in the UN is the subject of mathematics. In the world of education, mathematics is one of the subjects in school which is considered quite an important role in shaping and developing the potential of students, because mathematics is a means of thinking to examine something logically and systematically. According to Reference [3] that studying mathematics and acquiring mathematical skills is quite important and because it has become a technological language, then mathematics is important for students' knowledge and skills. Reference [4] also argues that learning mathematics has become a necessity for the full development of individuals in today's complex society such as the advancement of technology and the growing importance of today's means of communication makes it necessary for everyone to be able to adapt to the new situation.

## **2. Theoretical Basis**

### ***2.1 Mathematics Anxiety***

Despite its importance, in daily life, mathematics is often viewed as a difficult topic. Such perception is in part, due to the nature of math [5]. Reference [6] says most students think that math is a scary lesson, difficult to learn and very complex. The existence of negative perceptions like this will cause anxiety in students themselves in learning mathematics. Lavasani and his colleagues in [7] also explained that the perception of mathematics affect the learning outcomes achieved by students. Various negative perceptions about mathematics create anxiety and difficulty when studying mathematics that will ultimately affect the student's learning outcomes. According to [8] not only low-ability students who may feel anxious in school, but students who excel can also feel anxious to make students not optimal in learning.

In addition to being one of the most investigated concepts; mathematics anxiety (MA) has been affected all aspects of mathematics education directly or indirectly. there is no general consensus among the researchers on not only its definition and dimensions but also its causes and effects [9]. According to Richardson and his colleagues [10] mathematics anxiety involves feelings of tension and anxiety that interfere with the manipulation of numbers and the solving of mathematical problems in a wide variety of ordinary life and academic situations. Mathematics anxiety is a multi-sided structure and is intertwined with the terms of fear, worry and tenseness [5]. According to Wahid and his colleagues in 2014 [6] mathematical anxiety is a situation that occurs to a person when faced with mathematical problems, such as feelings or perceptions that tend not good about mathematics. According to [11] in his research states that feelings of anxiety like panic, not understand and helpless when doing something related to mathematics tend to affect the results of learning mathematics, especially for students. Prima and his colleagues in [12] states that mathematical anxiety among students is concerned with difficult to understand mathematics, always failing in mathematics, anxious if not understanding and low achievement in mathematics. Mathematical anxiety is a distressing feeling as well as a nervous discomfort in manipulating numbers and solving broad mathematical problems, both in everyday life and in the learning process [13]. So it can be said that mathematical anxiety is a tendency in an uncomfortable mood of anxiety, panic, nervousness, anxiety caused by something related to mathematics.

Reference [14] classified the factors causing MA according to grade levels as follows: (1) Elementary level, especially grades 3 and 4: Difficulty of material, hostile instructor behavior, gender bias, perception of instructors as insensitive and uncaring; (2) High school level, especially grades 9–11: Angry behavior, unrealistic expectations, embarrassing students in front of peers, gender bias, insensitive and uncaring attitude; (3) College level, especially freshman year: Communication and language barriers, insensitive and uncaring attitude of instructor, quality of instruction, evaluation of instruction, instructor's dislike for level of class, gender bias, age discrimination.

## **2.2 Test Anxiety**

In terminology test anxiety comes from two words, that is test which means test and anxiety which means anxious. So literally test anxiety is anxiety facing test or test. Almost certainly, someone who will face the test experience anxiety. In the world of education this phenomenon is known as an test anxiety (anxiety to face tests). Test anxiety is one type of emotion that can negatively affect the learning process. Test anxiety can be a major problem in the classroom at all levels, from elementary through high school to even college level. Test anxiety is usually experienced when a person faces a situation or activity that contains an assessment, such as a national exam [15].

Reference [16] states that female students' anxiety levels are higher than male students, this is because female students have greater academic success pressure, they are more afraid of failing to face exams than male students. Similarly, the results of a study from [5] which shows that based on the gender of students' mathematical anxiety differ significantly. Female students' anxiety is significantly higher than male students.

## **2.3 Hamilton Anxiety Rating Scale (HARS)**

To measure the low to high levels of anxiety one can use HARS. According to [17], HARS scale is an anxiety gauge based on the appearance of symptoms in anxious individuals. Each point is observed given the 5-level score of between 0 to 4. In HARS anxiety measured through 14 indicators with the following details: (1) Feeling Anxious : bad hunch, fear of the mind itself, Worries, anticipation of the worst, fearful anticipation, irritability. (2) Tension: feeling tense, anxious, trembling, irritable and lethargic (3) Fear : fear of the dark, against strangers, when living alone and afraid of large animals. (4) Sleep disturbance: difficult to start sleeping, waking at night, unsatisfying sleep and nightmares (5) Disorder intelligence : decreased memory, easy to forget and difficult concentration. (6) Feelings of depression: the loss of interest, decreased pleasure in hobbies, sadness, unpleasant feelings throughout the day. (7) Somatic symptoms: pain in the muscles and stiffness, snapping teeth, unstable sounds and muscle twitch. (8) Sensory symptoms: feeling stabbed, blurred vision, red and pale face and feeling weak. (9) Cardiovascular symptoms: tachycardia, pain in the chest, pulse hardens and heartbeat disappears a moment. (10) Respiratory symptoms : feeling depressed in the chest, feeling choked, often take a deep breath and feel short of breath. (11) Gastrointestinal symptoms : difficult to swallow, decreased weight, nausea and vomiting, stomach pain before and after meals, a feeling of heat in the stomach (12) Symptoms of urogenital: Frequent urination, can't resist urination, weak erection or impotence (13) Vegetative Symptoms: dry mouth, easy sweating, red face, roman hair stands, dizziness or headache (14) Behavior during interview : restlessness, trembling fingers, frowning or forehead, tense face, increased muscle tone and shortness of breath and rapid.

### **3. Research Methods**

#### ***3.1 Population and Sample***

This type of research is descriptive research that aims to find out how the image of anxiety level of students in facing UN on mathematics subjects. This research was conducted at Budi Rahayu elementary school Year Lesson 2016/2017.

The population in this study is all 6th grade students in the even semester of the 2016/2017 Lesson Year. The sample in this research is the students of grade 6 A, amounting to 40 students, 24 male students, 16 female students and 6 B grade students, 40 students, 17 male students and 23 female students with total of 80 students.

#### ***3.2 Data Collection Tool***

Data collection research using a questionnaire adapted from HARS realigned on the purpose of research. and interviews.

The questionnaire was distributed in April, almost a month before the implementation of the UN. After the results of the questionnaire data were obtained, a follow-up was conducted by interviewing several students to find out further analysis of anxiety levels.

**Table 1:** Test Anxiety Questionnaire

Questionnaire question	SA	A	LA	DA	SDA
1. I am afraid not able to answer math problems subject in UN					
2. I feel anxious when thinking about the implementation of the UN is not long.					
3. I always avoid when friends discuss mathematics subjects in the UN					
4. Implementation of UN which no longer make me unable to sleep soundly					
5. When I studied mathematics I found it difficult to concentrate because thinking about mathematics subjects is in UN					
6. I often resign after knowing the UN is still implemented this year					
7. I feel nervous about facing math subjects in UN					
8. I feel weak when thinking about mathematics in the UN					
9. My heart beat irregularly considering the implementation of the UN is not long anymore					
10. I find it difficult to breathe when I hear matters relating to mathematics in the UN					
11. I feel sick and want to throw up at the thought of mathematics courses in the UN					
12. I feel like to go to the toilet when I hear matters relating to mathematics in the UN					
13. I feel dizzy when thinking about mathematics subjects in the UN					
14. I find it difficult to express opinions when my friends discuss mathematics lessons in the UN					

## 4. Result and Discussions

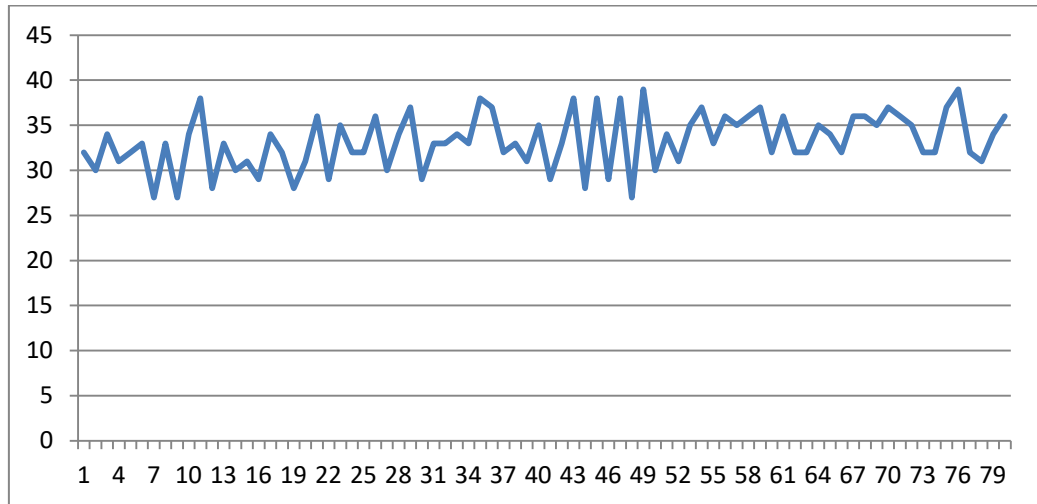
### 4.1 Result

From the result of the summing of questionnaire instruments that have been given to the students, can be known picture of anxiety level of students in facing the UN on mathematics subjects. 65 students scored  $\geq 31$ , 36 female students and 29 male students based on HARS were included in the category of very high anxiety level and 15 students scored between 25 - 30 based on HARS belonging to the category of high anxiety level. From Figure 1 it can be seen that the level of anxiety of students in facing UN on mathematics subjects in general is at a very high level of anxiety.

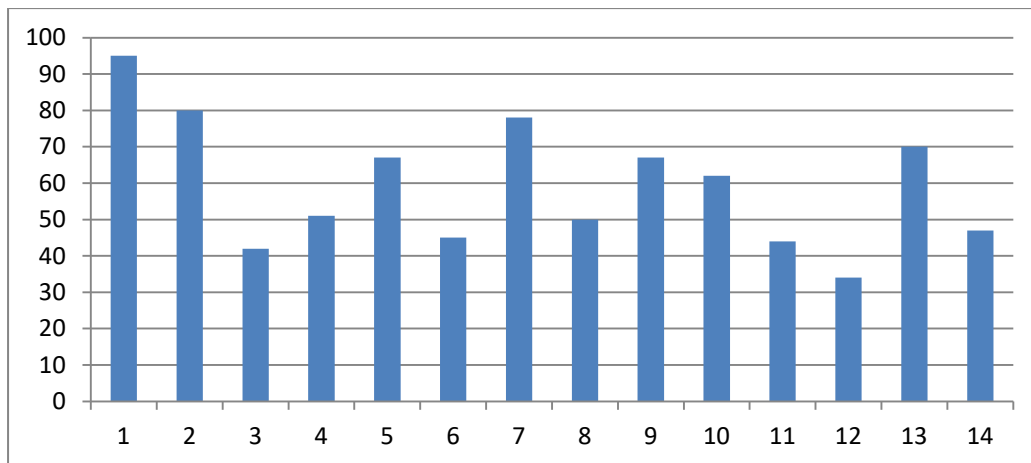
From the table 1 above can be seen some statements of the questionnaire instrument items that can provide an overview of matters relating to high student anxiety levels. There are 7 items of questionnaire instrument that are over 50% percentage of item number 1 (95%), 2 (80%), 5 (67%), 7 (78%), 9 (67%), 10 (62%), 13 (70%).

Item number 1 instrument has the highest percentage of answers (95%), which means students have high anxiety because students are afraid of not being able to answer the problems of mathematics subjects in the UN. Item

number 2 instrument also has a high percentage of answers (80%), meaning the students feel anxious for thinking about the implementation of the UN is not long anymore, which means that students' anxiety is also influenced by the time factor of UN implementation. In addition from the other five items can be seen that students experience some anxiety that is included in the high category that is difficult to concentrate, nervous, irregular heartbeat, difficulty breathing and dizziness that occurs because students think, remember and hear things related to Subjects of mathematics in the UN.



**Figure 1:** Anxiety Level of Elementary School Student Facing UN Subjects Mathematics Based on HARS



**Figure 2:** Percentage of Student Answers On Each Item of the Instrument Questionnaire

#### 4.2 Discussions

From the results of the study, students have a very high level of anxiety because students are afraid not able to answer questions about mathematics subjects in the UN. To better know the cause, researchers conducted interviews on several students. Based on the results of interviews, it can be concluded that students are afraid

not able to answer the problems of mathematics subjects in the UN because students have had the perception that mathematics is a difficult lesson, which then makes students feel anxious for fear of not being able to answer math subjects In the UN which will ultimately affect the results of the student's UN. This is in accordance with the study of Wahid and his colleagues (2014) [6] and Lavasani and his colleagues (2011) [7] which states that negative perceptions about mathematics will cause anxiety in students that will affect the student's learning outcomes.

From the results of the study also known that 65 students obtained a score of  $\geq 31$ , 36 female students and 29 male students who based on HARS included in the category of anxiety level is very high. This is in accordance with the research of Pena (2016) [16] which has been put forward in the literature review, that the level of anxiety of female students is higher than that of male students, this is because female students have greater academic success pressure, they are more afraid of failing to face the test Compared to male students.

In addition, the results of the interview is also known that the level of student anxiety is also influenced by the time factor of the implementation of the UN that is not long anymore so that students feel anxious, difficulty concentrating, nervous, irregular heartbeat, difficulty breathing and dizziness. This is consistent with the results of research conducted by Ranjan and his colleagues (2013) [13] which states that the implementation of the test or exam can cause anxiety mathematics. The conclusion of the research Mutodi and his colleagues (2014) [18] also revealed that mathematical anxiety comes when the test or test. So it can be said that the closer the execution time of the exam will make the individual or the students increasingly feel anxious face the test.

## **5. Limitations**

This research is only a descriptive research that aims to find out how the image of anxiety level of elementary school students in facing the UN on mathematics subjects that are held on even semester in SD Budi Rahayu Subsidy Lesson Year 2016/2017, almost a month before the implementation of the UN conducted. The data collected in this study used questionnaires whose questions were adapted from indicators on HARS with re-adjustment to research objectives and interviews to some students to find out more from the results of the data obtained in the questionnaire.

## **6. Conclusions and Recommendations**

### **6.1 Conclusions**

Based on the results of research and discussion, it can be concluded that the anxiety level of students Budi Rahayu in facing the UN on mathematics subjects included in the category of anxiety level is very high, which in this study results are influenced by several factors namely the fear of a large student On the inability to answer questions of mathematics subjects in the UN and the time of implementation of the UN is not long anymore.

### **6.2 Recommendations**

Based on these results, the recommendations can be submitted by researcher are:

- For teachers, it is better to give more training to students such as discussing UN problems especially math problems before the UN is implemented and always give motivation to the students to be more diligent learning and always think positive that they can answer the questions UN so that students can feel confident in solving math problems. It aims to reduce the anxiety level of students in facing the national exam on mathematics subjects.
- For students, should be more diligent in learning and practice doing mathematics problems related to the UN in order to improve the ability of students so that the results of the UN as expected.
- For other researchers, can make this as a reference to conduct further research on the level of anxiety students in facing the national exam on mathematics subjects.

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