

STUDENT'S RESPONSE TO MATHEMATICS LEARNING IN PROBABILITY MATERIALS

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ABSTRACT

Most people, especially the subjects that are very disliked learning mathematics because mathematics is famous for being difficult and boring. This happens because especially the demonstration techniques used by educators cannot benefit and influence the understanding of science. This study uses an approach to finding a substitute model for learning mathematics on the subject of probability. The procedure in this research is divided into three stages, namely: (1) the preparation phase (2) the implementation phase (3) and the opening phase. This study aims to determine students' reactions to learning mathematics on the subject of probability. In addition, respondents completed a poll of 10 questions with 4 possible answers, specifically SS (Strongly Agree), S (Agree), TS (Disagree), and STS (Strongly Disagree). From the results of this study, it can be said that the student's response to learning mathematics in the subject of opportunity received a strong and positive response. Opinion questionnaires can be developed more deeply and supplemented by additional meetings thoroughly.

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INTRODUCTION

Mathematics is one of the fields of information that is used as basic information because arithmetic learning fosters interpretation. However, in general, students' love of science is still relatively low. However, many students think that mathematics is a difficult subject to see, so many students are not motivated to study science because of this assumption. This of course will greatly impact student learning outcomes, and students often have difficulty solving numerical problems in each section and subsection. The challenges that students face when dealing with numerical problems can be identified from the survey by conducting a problem-checking process. Therefore, students should no longer have difficulties processing numerical statements so that students will be persuaded to study science (Astuti et al., 2015).

However, most people, especially students, do not really like learning mathematics because learning mathematics is known to be difficult and boring. According to Nik Aziz's article, this is mainly because the demonstration technique used by educators does not benefit students and makes them negligent in understanding mathematics. Where most of them are still powerless in dominating questions which include thoughts, clarifications, and further offering their point of view as explanatory sentences because there is no preparation in the critical thinking process in Zaidatun, Jamalludin & Nur Wahida's articles (Bahru, 2014).

Response according to the Big Indonesian Dictionary (KBBI) has the meaning of reactions, reactions, and answers to articles. Hassan. More specifically, according to the reference word Psychological reactions are muscle cycles that arise as a result of excitement in response to an article or behavior... Chaplin. Answers may appear due to tests or polls. Behavior can be seen as individual change, visible or sustained. Thus, in the implementation of learning, there needs to be a response between educators and students (Simanjuntak & Imelda, 2018).

The concept of opportunity itself was originally enlivened by gambling players or individuals who often fight games or games and are determined to have the choice to dominate the game. Although the material for odds was raised by betting games, odds are today a commonly used piece of mathematics. For example in the use of industry, science, and financial management Isrok'atun (Putridayani & Chotimah, 2020).

Learning is an appropriate cycle, especially the most common way of conveying a message from source to receiver through multiple channels/media. Messages, message sources, channels/media, and message recipients are part of the communication interaction. The cycle that will be delivered is the substance of the curriculum or childhood in the educational program, and the source can come from speakers, students, other people, or authors of books and media. Of course, these people must be knowledgeable/competent with the material they provide (Firmansyah & Firmansyah, 2017).

This happens because information about student response levels is very meaningful so it can be seen as an effort to improve students' mathematics learning. The training phase includes interaction assessments to measure academic performance against normal goals. One of the assessments of students' mathematical abilities is an assessment of students' thinking processes. Students will be given unconventional numerical representations to assess critical thinking skills, numerical thinking, or mathematical correspondence (Lutfianto & Sari, 2017).

Based on the background that has been described, in the initial observations and interviews at SMK Bina Siswa 2 Cililin in the mathematics learning process, educators play a role in conveying ideas without using learning media, making students play a role not to be involved in learning and training. In light of this examination, analysts were drawn to the title "Student's Response to Mathematics Learning in Probability Materials".

METHOD

This study uses a qualitative approach to finding a model of student response to mathematical understanding on mathematics test questions in the subject of opportunity. The techniques in the review are divided into 3: 1. planning, including making questions and various information; 2. implementation, the questions have been approved and then completed with information gathering by testing questions to 10 students of class X. The sorting of information is completed in a test, especially a test for opportunity material. In addition, students are evaluated and selected based on data from educators who can convey their views appropriately and accurately; 3. openness, the consequences of examining student reactions, and the side effects of the meeting are introduced.

Experiment with a 10-point survey tool that relates students' views on the mathematical understanding of mathematics test questions to the subject of probability. The instrument can select options with an explanation section to make it easier for scientists to calculate scores. The means of investigating information reactions begin by assessing each answer decision using a measurement scale. the results of the student survey form in table 1.

Table 1. Student Response Questionnaire Score

| Answer Category | Statement Survey Results | |
|-------------------------|--------------------------|----------|
| | Positive | Negative |
| SS (Strongly Agree) | 4 | 1 |
| S (Agree) | 3 | 2 |
| TS (Disagree) | 2 | 3 |
| STS (Strongly Disagree) | 1 | 4 |

Selected subjects were asked to cut the questions made and continue to introduce the survey. The questionnaire consists of 10 questions. The following are the steps of the response questionnaire that is analyzed, namely:

- a. Summing up the results of the survey. All answers are given the result is 1 for students
- b. Check the results of all students.
- c. Calculating the explanation of the results of the discussion using the equation

$$\text{Interval} = \frac{\text{all the results of students who answered}}{\text{total number of students}} \times 100\%$$

Score interpretation criteria:

Table 2. Explanation of scores

| Percentage | Criterion |
|------------|-------------|
| 0 < 20% | Very weak |
| 21 < 40% | Weak |
| 41 < 60% | Enough |
| 61 < 80% | Strong |
| 81 < 100% | Very strong |

- d. Calculating the average score of students answering the results of the questionnaire and then determining the category of student responses to the criteria by matching the percentage of results with positive criteria

RESULTS AND DISCUSSION

Result

This review plans to determine students' reactions to the mathematical understanding of the probability subject mathematics questions at SMK Bina Siswa 2 Cililin. Information on student polls obtained by class X amounted to 10. In addition, informants completed a poll of 10 questions along with 4 choices, namely SS (Strongly Agree), S (Agree), TS (Disagree), and STS (Strongly Disagree). The results in class X SMK Bina Siswa 2 Cililin are seen in table 3.

Table 3. Results of Student Attitude Scale

| No | Indicator | Average Percentage of Student Responses | Category |
|----------------|--------------|---|-------------|
| 1 | Interest | 82% | Very strong |
| 2 | Motivation | 77% | Strong |
| 3 | Satisfaction | 73% | Strong |
| 4 | Interest | 80% | Strong |
| 5 | Response | 76% | Strong |
| Average amount | | 78% | Strong |

From Table 3. It is known that the average response of students at SMK Bina Siswa 2 Cililin in class X seems to know the student's response to mathematical understanding on mathematics test questions in the subject of opportunity. For indicators of interest, the average percentage of student responses is 82%, so the category is very strong, from the motivational indicators of interest, the average percentage of student responses is 77%. In the interest satisfaction indicator, the average student response presentation is 73%, which means the category is strong.

Furthermore, the interest indicator obtained an average percentage of 80% so it was included in the strong category. And the response indicator gets a percentage of 76%. Of the five pointers obtained an average percentage of 78%, so it tends to be considered that students are very interested in learning mathematics on the material of opportunity.

Discussion

Of the subjects selected to be interviewed were subjects who responded Strongly Agree. eight subjects were selected from the students of class X. Next was the interview of the researcher (A) with students from class X (B) who answered Strongly Agree.

Based on the interests of many students who are very interested in learning mathematics, of course, in the opportunity material because they get a lot of useful knowledge to be able to solve math problems and most of the things that make students interested in learning mathematics when at school are teachers because they often provide very good directions so that students are more motivated. interested in participating in mathematics learning. Following are the results of interviews with students regarding their interests as follows:

A : *"What made you so interested in mathematics?"*

B : *"Because learning mathematics can train my brain to think critically so that it can train in learning and get useful knowledge"*

A : *"In that case (learning) why learning mathematics can train the brain?"*

B : *"Yes, because math is fun and exciting where we have to memorize formulas and then solve difficult problems"*

A : *"While learning mathematics, who made you that much fun at math?"*

B : *"Well, what made me interested was that the math teacher was very fun, he could joke with him, and not too serious to study"*

A : *"When did the teacher make a joke during the lesson?"*

B : *"When I was dizzy and tired of learning the teacher made the atmosphere so cool"*

- A : *"In learning how does the teacher convey it so that it can be as fun as that?"*
- B : *"When in class the teacher explains the probability material and then makes a group game using dice to answer questions"*
- A : *"When you do a problem using dice, where do you try it?"*
- B : *"I tried it in front of the class because it was a group so the atmosphere was not tense"*

Regarding the interviews above, the average percentage of interest indicators is the very strong category, so students are very interested in learning that is so cool and fun with the teacher often joking so as not to make a headache. According to Sunandar & Pirmanto (2021) Interest indicators reveal that consideration can be obtained of how educators can make use of the outline, and delivery of learning is not chaotic so that learners effectively know the material.

Based on motivation Many students are inspired to learn mathematics because it can open up business opportunities and aspirations, many things are motivated by various figures about learning mathematics because it is so important for the arithmetic process. Following are the results of interviews with students regarding motivation as follows:

- A : *"What makes you motivated about learning mathematics?"*
- B : *"In my opinion, there are many motivations for learning mathematics, for example, it can open up business opportunities or goals"*
- A : *"Why is it possible to open business opportunities and dreams?"*
- B : *"Because to open a math business, it is very necessary, especially counting, if you can't count, it might be difficult to open a business"*
- A : *"Regarding the achievement of your goals, who are you most motivated?"*
- B : *"What motivates me can be seen from the various figures who are so successful in their goals such as teachers, lecturers, doctors, civil servants, etc."*
- A : *"To open a business or dream when you can achieve it?"*
- B : *"Because I'm still in school maybe after graduation so I can focus on it and for now focus on learning first, especially math"*
- A : *"When you don't focus on learning mathematics, how can you stay focused?"*
- B : *"By increasing motivation to make your mind wider and always interacting with friends"*
- A : *"Where can you get so much motivation?"*
- B : *"When I was at school because I got motivation from various teachers who often gave directions"*

Regarding the interview above, the average percentage of motivation indicators is the strong category, so students are very motivated in learning mathematics, especially to open a business or the desired goals, and as much as possible to continue learning to achieve what is desired. According to Khairiyah (2018) on the aspect of motivation, This shows students respond strongly. This condition makes students more enthusiastic about following the developing experience student learning is influenced by inspiration. Inspired students must be

seen from a solid response to the improvement provided by the educator by showing energy to perfect their learning tasks so that they feel happy and satisfied to follow the responsibilities of the instructor.

Based on the satisfaction, he saw that students in learning mathematics were very happy when they got scores from perfect answers, especially when discussing with friends in groups various difficult problems could be solved easily and the teacher always gave examples of questions to make it easier for students to work on the questions. The following are the results of interviews with students regarding satisfaction as follows:

- A : *"What makes you so satisfied with learning mathematics about probability?"*
- B : *"When working on a fairly difficult question and getting a perfect answer that's where I feel happy"*
- A : *"When given a difficult question to whom do you ask?"*
- B : *"When in groups I ask friends and discuss looking for answers"*
- A : *"Why not alone to find answers to the questions?"*
- B : *"Because it's very fun to discuss with friends, especially if you like to joke a little so you don't get so dizzy"*
- A : *"When did you get so serious when you did the questions?"*
- B : *"When the teacher gives examples and it is easy to understand there I am very focused so that I can be the first to get grades from the teacher"*
- A : *"What if the teacher doesn't give examples, can you work on the questions given?"*
- B : *"I try my best to find answers so that I don't compete with others, but if it's difficult, I prefer to discuss with friends so it's faster"*

Regarding the interviews above, the average percentage of satisfaction indicators is the strong category, so students are very happy when working on group questions so they can joke a little bit when individual students are very focused, let alone given examples of questions so that they can be the first to get grades. According to Andriani et al (2021) Satisfaction is the sensation of student excitement in participating in learning. This shows that these student reactions create a sensation of excitement for students in their opportunity to develop. Students feel this learning becomes more fun because they can discuss with the teacher and can exchange ideas with other students so that they can complete the work given by the teacher.

Based on the interests of many students who want to learn mathematics, to calculate correctly, especially the attraction of interest in learning mathematics is so curious about the calculations that are not yet known by themselves and the interests of students are various but most of their interests are in the school environment because it is easier for students to understand. Following are the results of interviews with students regarding their interests as follows:

- A : *"What made you very interested in learning mathematics?"*
- B : *"To increase my curiosity about learning mathematics that is not yet known to me so that it is easy to understand"*
- A : *"From your curiosity, who made you so interested?"*

- B : "The teacher who made me interested in learning mathematics, especially the opportunity material and has a high interest in mastering the material"*
- A : "Why is it only about opportunity material that makes you interested?"*
- B : "Because in the probability material there are many questions about objects such as dice, coins, cards, and so on"*
- A : "In the probability material there are dice, coins, and cards, how do you play them?"*
- B : "When working on questions, you can demonstrate the same objects as in the questions and it's good so that the learning atmosphere is not too boring"*
- A : "Where do you display the objects to do the questions?"*
- B : "When the class is on each bench so that when the teacher gives examples of how to use these objects, my friends and I pay attention from our respective seats"*

Regarding the interview above, the average percentage of interest indicators is the strong category, so students are interested in learning mathematics with curiosity with various interests in material opportunities, especially being able to use various objects. According to Winarso (2014) Interest is a feeling of inclination and a feeling of attachment to something or a movement, without anyone telling. Correspondingly, interest implies a great inclination and energy or an extraordinary desire for something.

Based on students' responses to learning mathematics, it is easy to do with friends and when asked to think, many find it difficult to issue their responses for fear of being wrong to reveal what answers students think are right or wrong. Following are the results of interviews with students regarding their interests as follows:

- A : "What do you think about learning mathematics?"*
- B : "My response is that mathematics is fun, it's easy and difficult, but when working on questions, most of them are a little less able to do it alone"*
- A : "Why is math fun, let alone easy and difficult?"*
- B : "Because so we can count, it's just fun, while for the easy ones it's difficult, the questions given by the teacher are sometimes easy, sometimes difficult"*
- A : "Easy and difficult questions may be about opportunity material, then when does the teacher give these questions?"*
- B : "whenever the teacher wants, but often in the initial meeting it is always easy, so to the next meeting it gets more difficult"*
- A : "Regarding the problem of opportunities that are getting more difficult, how do you do it?"*
- B : "For opportunities, it is a little difficult but I still work hard to find answers and often get together to discuss but most of them are afraid of being wrong when expressing right or wrong answers"*
- A : "In your opinion, where is the right or wrong place of the answers that have been done?"*
- B : "In my opinion, the various formulas are so many and a little complicated, so I don't know which one is right or wrong, so I don't dare to express the answer"*

Regarding the interview above, the average response indicator is the strong category of being a student. According to Khairiyah (2018) In this aspect of the response, it shows that the student's response is ready to further develop learning so that there is a passing grade, argues that different subjects should have the option of using instructional media that will want to direct students in understanding conceptual material.

Given the description of the results for each pointer, the average is order of strength because as a result of the mental scale of students to learn mathematics on the material of opportunity, it tends to reason that the importance of using instructional media to build student inspiration. If stimulated by learning exercises, the result will be interested in learning dynamic ideas and will improve student practice and learning outcomes.

CONCLUSION

From the results of this research, it can be concluded that students' reactions to mathematics education in the subject of opportunities to receive responses that are categorized as "strong" from all indicators. The questionnaire could be expanded more in-depth and supplemented by a more comprehensive interview.

Suggestions for the next researcher if using uniform research can use a longer duration of time after working on the questions than before being given the questions and after being given the questions. Information can be enriched to conclude by multiplying the number of subjects given a matter of opportunity.

REFERENCES

- Andriani, D., Prasetyo, K. H., & Astutiningtyas, E. L. (2021). Respon Siswa terhadap Pembelajaran Dalam Jaringan (Daring) Pada Mata Pelajaran Matematika. *Absis: Mathematics Education Journal*, 2(1), 24–30. <https://doi.org/10.32585/absis.v2i1.830>
- Astuti, F. N., Yusmin, E., & Suratman, D. (2015). Analisis Kesulitan Pemahaman Konseptual Siswa dalam Menyelesaikan Soal pada Materi Peluang Di MAN Sanggau. *Jurnal Pendidikan Dan Pembelajaran*, 4(10), 1–10.
- Bahru, D. I. J. (2014). Pemahaman Siswa Pada Pokok Bahasan Peluang: Studi Kasus Di Satu Sekolah Menengah Di Johor Bahru, Malaysia. *Jurnal Pengajaran MIPA*, 19(1), 19–28.
- Firmansyah, M. A., & Firmansyah, M. A. (2017). Analisis Hambatan Belajar Mahasiswa Pada Mata Kuliah Statistika. *JPPM (Jurnal Penelitian Dan Pembelajaran Matematika)*, 10(2), 115–127.
- Khairiyah, U. (2018). Respon Siswa terhadap Media Dakon Matika Materi KPK dan FPB pada Siswa Kelas IV di SD/MI Lamongan. *AL-MURABBI: Jurnal Studi Kependidikan Dan Keislaman*, 5(2), 197–204. <https://doi.org/10.53627/jam.v5i2.3476>
- Lutfianto, M., & Sari, A. F. (2017). Respon Siswa terhadap Soal Matematika Mirip PISA dengan Konteks Berintegrasi Nilai Islam. *Jurnal Elemen*, 3(2), 108–117. <https://doi.org/10.29408/jel.v3i2.342>
- Putridayani, I. B., & Chotimah, S. (2020). Analisis Kesulitan Belajar Siswa Dalam Menyelesaikan Soal. *MAJU: Jurnal Ilmiah Pendidikan Matematika*, 7(1), 57–62.

- Simanjuntak, S. D., & Imelda, I. (2018). Respon Siswa terhadap Pembelajaran Matematika Realistik Dengan Konteks Budaya Batak Toba. *MES: Journal of Mathematics Education and Science*, 4(1), 81–88. <https://doi.org/10.30743/mes.v4i1.874>
- Sunandar, A., & Pirmanto, Y. (2021). Matematika Pada Materi Pecahan Senilai Dengan Kartu Domino Berbantuan Visual Basic Application for Excel. *Jurnal Pembelajaran Matematika Inovatif*, 4(2), 249–254. <https://doi.org/10.22460/jpmi.v4i2.249-254>
- Winarso, W. (2014). Membangun Kemampuan Berfikir Matematika Tingkat Tinggi Melalui Pendekatan Induktif, Deduktif Dan Induktif-Deduktif Dalam Pembelajaran Matematika. *Eduma: Mathematics Education Learning and Teaching*, 3(2), 95–118. <https://doi.org/10.24235/eduma.v3i2.58>