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ANALYSIS OF STUDENTS' SKILLS TO COMPLETE SCHOOL EXAMS BASED ON THE MINIMUM COMPETENCY ASSESSMENT

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Abstract

This study analyses students' skills to complete school exam questions based on the minimum competency assessment (MCA). This study employs qualitative and descriptive methods to characterize students' MCA-based School Examination question-solving abilities. The subjects of this study were class XII students at HSPG Bekasi who completed MCA-based school exams containing literacy and numeracy skills. In addition to collecting samples by interviewing six students, the researchers gathered data to describe students' abilities. Students answered a total of forty questions. This study found four students with low numeracy skills, 13 with moderate skills, and three with high skills. Low, medium, and increased literacy levels were determined through interviews. Students with weak literacy skills struggle to read algebra or geometry questions, indicating they have soft numeracy skills. Medium-literacy students like the story and simple context questions. They cannot answer questions because they cannot remember formulas. High-literacy students. They like story questions and questions with real-world contexts because they let us apply our skills and understand existing procedures. They struggle with knowledge-based questions. Because additional reasoning takes so much time, students with high literacy have average numeracy skills. So, the students' problem-solving skills improve.

Keywords: student, ability, minimum, competency, assessment

Abstrak

Penelitian ini menganalisis keterampilan siswa dalam menyelesaikan soal ujian sekolah berdasarkan asesmen kompetensi minimum (AKM). Penelitian ini menggunakan metode kualitatif dan deskriptif untuk mengkarakterisasi kemampuan pemecahan soal ujian sekolah berbasis AKM siswa. Subjek penelitian ini adalah siswa kelas XII HSPG Bekasi yang menyelesaikan ujian sekolah berbasis AKM yang berisi keterampilan literasi dan numerasi. Selain mengumpulkan sampel dengan mewawancarai enam siswa, peneliti mengumpulkan data untuk mendeskripsikan kemampuan siswa. Siswa menjawab total empat puluh pertanyaan. Penelitian ini menemukan empat siswa dengan keterampilan berhitung rendah, 13 siswa dengan keterampilan sedang, dan tiga siswa dengan keterampilan tinggi. Tingkat literasi rendah, sedang, dan meningkat ditentukan melalui wawancara. Siswa dengan keterampilan literasi yang lemah berjuang untuk membaca pertanyaan aljabar atau geometri, yang menunjukkan bahwa mereka memiliki keterampilan berhitung yang lembut. Siswa literasi menengah menyukai cerita dan pertanyaan konteks sederhana. Mereka tidak dapat menjawab pertanyaan karena mereka tidak dapat mengingat rumus. Siswa berliterasi tinggi menyukai pertanyaan cerita dan pertanyaan dengan konteks dunia nyata. Mereka berjuang dengan pertanyaan berbasis pengetahuan. Karena penalaran tambahan membutuhkan banyak waktu, siswa dengan literasi tinggi memiliki kemampuan numerasi rata-rata. Jadi, kemampuan pemecahan masalah siswa meningkat.

Kata kunci: siswa, kemampuan, minimum, kompetensi, asesmen

1. Introduction

Three essential components of learning need to be considered, namely curriculum (what is expected to be achieved), implementation of knowledge (how to achieve), and assessment (what has been completed) [1, 2]. Of the three components, the judgment is

one part. The teacher conducts an evaluation to identify the strengths and weaknesses of students. The review determines the student's achievement in the expected and planned competencies [3]. A good and correct assessment will provide accurate information about the triumph of student competencies [4, 5].

Based on the Program for International Student Assessment (PISA) results, students' learning ability in Indonesia shows that the results are still low in primary and secondary education. Compared to other countries in Asia, Indonesia is ranked at the bottom. These results are based on a survey conducted by PISA in 2018. The results of the PISA survey show that students in Indonesia have reading literacy competencies of around 70% and are still at the lower level [6]. In addition, the math and science skills of students in Indonesia are about 71% and 60%, respectively, which are also still at a lower level [6]. The results of the PISA survey in Indonesia did not show a significant increase in the last 10-15 years. This result makes Indonesia one of the countries with the lowest consistent PISA survey results ranking. The results of students' abilities, which are among the lowest compared to other countries, make Indonesia need to comprehensively map the quality of education to improve the quality of learning.

The low literacy skills of students can be seen from the activities while in class in the learning process, such as students who only directly fill out what is asked without thinking [7]. If the questions are changed a little, students will find them very difficult to answer. Students are accustomed to only filling in the tables provided by the teacher without being able to interpret the graphs/tables provided, so their abilities are limited [8]. The factors causing the low literacy skills of Indonesian students related to PISA results include: 1) the selection of teaching materials, 2) misconceptions, 3) non-contextual learning, 4) low ability in reading, and 5) a learning environment and climate that is not conducive [9]. The lack of students' ability to understand information resulted in students experiencing errors in the problem-solving [10]. Furthermore, the coronavirus pandemic period is when science and technology are developing rapidly [11]. So the essential skills that students must possess are the ability to read, write, count, and understand technology, understand the information displayed in numeric and graphic form and think critically about the information or data [12].

The National Examination (NE) score has been used to determine student graduation and the standard for continuing to a higher level of education since 2003. However, in 2015 the NE score was no longer a determinant of graduation, but the National Examination remains a scary, stressful, and draining thing for teachers [13]. The government has determined that the National Examination is abolished, and the Minimum Competency Assessment (MCA) is held. In addition to the MCA, the character survey is one of the evaluations in the independent learning policy. The Minimum Competency Assessment is part of the national assessment. MCA measures the essential competencies that all students need to learn regardless of their specialization. The implementation of MCA is adaptive, which means that each student works on the questions according to their abilities [14]. Therefore, all students will get questions that can measure the same competence.

The MCA set by the government is one part of the government's target to prepare students to face the 21st century, namely having critical thinking skills, creativity, communication skills, and collaboratively [15]. The MCA consists of literacy and numeracy abilities. These two abilities are essential because literacy and numeracy are fundamental competencies students need regardless of their profession and aspirations in the future. In addition, literacy and numeracy skills are also related to making wise decisions in students' lives. According to the Minister of Education and Culture, literacy material will emphasize the ability to understand and analyse reading [16]. So not only can read but also must be able to understand and understand the concept behind the reading or writing. Next, the numeracy material will emphasize the ability to analyse numbers [16]. These numbers are different from mathematical knowledge. In simple terms, numeracy is a skill of applying mathematical knowledge such as number concepts and arithmetic operations skills to interpret quantitative information in real life.

A simple example is when students in a class of 28 students want to go on an excursion somewhere. To go to this place rent a car with a car driver. The vehicle can only accommodate six students. So how many cars are needed? Based on mathematical knowledge, the solution is possible with 28:6 = 4.666. Nevertheless, five vehicles are required with numeracy skills because it is impossible to rent 4,666 cars [17].

The minimum competency assessment is divided into text content and text context. The text contained in the MCA includes literary and informational texts. In contrast, the text context has personal, socio-cultural, and scientific contexts in literacy reading materials for the Minimum Competency Assessment [16]. The MCA can measure students' cognitive learning outcomes, including reading and numeracy literacy [18]. In addition, the MCA aims to measure competence at the level of each student who is expected to reach professional competence [18]. The competence of students to reach this level is being able to make inferences from the results of integrating some information in the text and being able to integrate and evaluate the content, quality, and way of writing data in a text [16].

The MCA, held in Indonesia, is reading and numeracy literacy, assuming that these two things are general and essential competencies that must be mastered by students [19]. Teachers can use this level of competence to develop a practical and quality learning framework to achieve quality education expectations [20]. Meanwhile, the national facts about the MCA, namely the development of questions, are divided into six levels, namely level 1 at level (grade 1-2), level 2 at level (grade 3-4), level 3 at level (grade 5-6), level 4 at the level (grades 7-8), level 5 at the station (grades 9-10), and level 6 at the station (grades 11-12) [16]. Participants who take the MCA are students in grades V, VIII, and XI. They have experienced the learning process in their schools, so schools can be said to have contributed to the learning outcomes measured in the 2021 National Assessment [21]. Grades V, VIII, and XI are classes in the middle of the school level. A national assessment is implemented in the middle of the story because it can provide time for schools and teachers to make improvements before students graduate

at that level and will not cause stress to students and parents. After all, the national assessment cannot be used as a student selection tool [22].

Based on previous studies, the provision of training on questions based on numeracy literacy has a significant influence on student learning outcomes and the implementation of the training on questions based on mathematical literacy is carried out well and can be declared successful [23]. The numeracy ability of students is more dominant at the moderate level with a percentage of 75%, then a sample of 6 students is taken to be interviewed with various levels of ability to strengthen the results of the study [24]. The lowest ability of PPG SD students in positions in solving math problems is their ability to use symbols or numbers related to mathematics in solving daily problems, this is because most PPG SD students make mistakes in writing numbers and symbols in solving math problems even though the intent is what they want to convey is correct so that it will cause misconceptions for those who read the results of their problem-solving [25]. One of the efforts to improve mathematical literacy skills is to apply learning that provides mathematical tasks that require mathematical reasoning in solving them. Through the provision of these tasks, the reasoning abilities of students will be trained which will then improve their mathematical literacy skills [26].

Based on the description above, the authors conducted a study with the title analysis of students' skills to complete school exams based on the minimum competency assessment.

2. Methods

This type of research uses a qualitative approach with descriptive methods to describe students' abilities in solving MCA-based School Examination questions. The authors conducted this research at HSPG Bekasi. The research instrument used was the MCA-based school exam questions which included literacy and numeracy skills and guided interviews. The subjects of this study were students of class XII for the academic year 2020/2021. The authors selected research subjects by conducting guided interviews with six students as supporting data to describe students' abilities. The test given to students is 40 questions that refer to the National guidelines, which are appropriate at the high school level—consisting of multiple-choice, complex multiple-choice, matchmaking, short entry, and description [16].

Students carry out this test to measure everyone's numeracy and literacy abilities by testing the MCA questions. Then the results of the data that have been done are classified into three parts: high-level powers, medium-level abilities, and low-level abilities. The researchers conducted interviews after the test, and the results [27]. Interviews were conducted referring to the interview guidelines that had been prepared. A sampling of students is to strengthen the data on students' abilities. The data analysis technique was carried out descriptively, describing and describing the results of tests and student interviews.

3. Results and Discussions

The result of this research is to measure literacy and numeracy skills. Literacy ability is measured by students' ability to understand the reading provided in the questions,

which are then implemented in working on the questions. Literacy skills were obtained from guided interviews aimed at the research subject. In contrast, numeracy skills contain three components: content, cognitive processes, and context. The scores of 20 students are presented in the form of a pie chart, as shown in Figure 1 below.

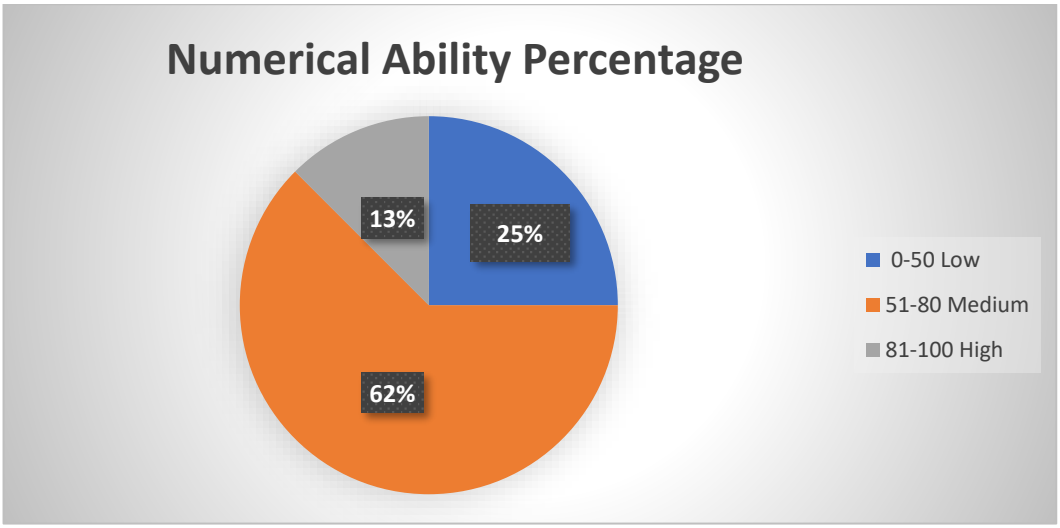

Figure 1. Results of the Percentage of Students' Numerical Ability

From Figure 1, the percentage of students' numeracy which is classified as at a low level, is 25%, at medium level 62%, and at a high level is 13%. From the results of these percentages, it can be concluded that the highest percentage is the average percentage. After getting the test results, the researcher took the research subjects. The subjects taken were two students with low-level numeracy abilities, two with medium-level numeracy abilities, and two with high-level numeracy abilities interviewed online to find out the difficulties they experienced. The following value score data that will be used as research subjects can be seen in Table 1 below.

Table 1. Sample Score of MCA of Numerical Ability Questions

Number	Name	Numeracy Score
1	Gilang Satrio Wicaksono	31
2	Kaifa Caesar Gibran	38
3	Vania Erir Fillycentria	66
4	Krishna Adiwena Saputra	68
5	Ivory Jessica Argya	88
6	Tikah Valentina	89

After the research subjects were obtained, each subject was interviewed in a guided manner which aims to explore how far the difficulties experienced by each subject and to determine the literacy ability of students in understanding reading. To make it easier to discuss issues with low numeracy abilities, they are symbolized as KR, problems with moderate numeracy abilities are represented as KS, and issues with high

numeracy abilities are designated as KT. The following are the results of guided interviews conducted with research subjects.

2.1. Results of the Analysis of Students with Low Numerical Ability

For students with low numeracy skills, the first student (KR1) gets a 31 out of 100. Guided interviews were conducted online through the Google Meet application. KR1 students explained that they did not understand much about the type of MCA questions. They had many difficulties, especially with all questions. There were readings which is a long process, so they had trouble and only answered according to their abilities and understanding. Besides that, KR1 students also said that the MCA questions have many more complicated types. KR1 students find it difficult in the multiple-choice type because many story questions are presented, so they feel too lazy to read and understand the meaning of the questions.

Students with the second low level of numeracy ability (KR2) get a 38 out of 100. The guided interviews are conducted online through the Google Meet application. KR2 students said that they had never known about the type of MCA questions, so they had difficulty in the process of working on the questions given. The second student also chose to find it easier to do school exam questions as usual compared to MCA-based school exam questions because the previous school exam questions were only multiple-choice types. However, for MCA-based questions, there were five types of questions, and the questions were many story questions, so it took a long time, and they found it challenging to understand the reading to answer the question.

The interviews with students with low numeracy skills found that the two students with low abilities were not used to working on MCA-type questions. Besides that, students' numeracy skills were still very lacking. It was proven by students who still complained about many story questions. Students felt it challenging to implement the reading in the problem, so it can be concluded that the literacy abilities of the two students are also low. Whereas literacy ability is the ability to change story questions in the form of algebra and numbers, it can be concluded that the student has soft literacy skills, so the student's numeracy ability is also common. To improve the literacy skills of these students, one way that is done is that the teacher must always provide direction and practice more with story questions to be applied and concluded in mathematical algebraic concepts so that they can improve mathematical reasoning and can deepen students' understanding. understand. This is in accordance with the opinion of Kusumawardani et al. who states that one of the efforts to improve students' mathematical literacy skills is to increase competence, namely mathematical reasoning [26]. Students' mathematical reasoning ability is improved by giving assignments that can train students' reasoning. Through the assignments given, students will be trained to use their reasoning, so that they can improve their mathematical literacy skills.

2.2. Results of the Analysis of Students with Medium Numerical Ability

Students with a moderate level of numeracy skills (KS1) get 66 out of 100. Interviews were conducted online through Google Meet. The researcher asked the KS1 students

whether there were difficulties or obstacles in working on the MCA-type questions, and the students answered that they did not have too many problems in the process. The student also said that he prefers questions with a context component. The reasons can be done and understood because the questions are closely related to everyday life. However, sometimes it is challenging to implement story problems in algebraic form, especially in description problems. For KS2 students, students got a score of 68 out of 100. Interviews were conducted online through Google Meet, the researcher asked about the type of MCA questions, and the students answered that they had worked on the MCA-type questions. This second student has difficulty in the description section of calculating the formula that contains the context component in the problem. He forgot the procedure and had trouble working on it.

From the results of interviews with the two students, information was obtained that both students had moderate literacy skills because they liked story questions and questions with contexts related to everyday life. They were solving story problems and problems with context. However, sometimes they still had difficulty implementing them in several questions. At the same time, the ability to numeracy is classified as moderate numeracy ability because it has problems regarding forgetting the formula, so it is constrained in the problem-solving process. To improve the students' literacy and numeracy abilities, one way to do this is for the teacher to always provide many practice questions. An understanding of the basic concepts of formulas related to events in the surrounding environment so that students will understand and understand the application of formulas and students will be accustomed to implementing them in their environment. It follows the opinion of [28], which states that students who have moderate abilities are given the training to identify their background and relate it to the concepts they have learned in learning activities that will increase their abilities.

2.3. Results of the Analysis of Students with High Numerical Ability

Students with the first high level of numeracy ability (KT1) scored 88 out of 100. Interviews were conducted online via Google Meet. The researcher asked about the questions with the MCA type, and the students already understood the MCA and were happy with the MCA type questions. Then the researcher asked about the difficulty in understanding the reading of the story questions. The students preferred content stories such as algebra, measurement, and cognitive and context components. He still finds it challenging to work on questions with much reasoning, so it takes a long time to understand and work on these questions, but overall, the story questions given can still be understood well. The student said that the tips for working on the MCA questions were enough to be done calmly and carefully to read confusing questions.

The student with the first high level of numeracy ability (KT2) scored 88 out of 100. Interviews were conducted by voice call with the Google Meet application. The researcher asked about the MCA-based school exam questions, and the students already understood about feeling happy with the MCA question types. Then the researchers asked about the difficulties in understanding reading and working on the MCA questions. The students answered that they had no challenges and liked story questions

and content component questions such as algebra, measurement, and cognitive components because we can export and implement our abilities and understanding in existing formulas. They find it difficult for questions with very complex content coverage and requiring exceptional knowledge, so it will take much time to work on them.

From the results of interviews with the two students, the authors obtained information that both students have high literacy and numeracy skills. After all, they like story questions and questions with contexts related to everyday life because they can explore and implement our abilities and understanding of existing formulas. According to Maulidina, students with high mathematical skills can use various kinds of numbers or symbols related to basic mathematics to solve mathematical problems and can analyze information in the form of graphs tables, charts and others and use the information [25]. In solving problems. However, they still have a little difficulty deciphering the questions requiring more understanding and reasoning because it will take up a lot of time in the process. In addition, to improve students' numeracy skills, one way to do this is for teachers always to provide lots of practice questions with a heavier type of reasoning so that students' numeracy skills will be more accustomed to implementing the problem solving well. It follows the opinion of Cahyanovianty & Wahidin who state students with high numeracy can solve mathematical problems well, so learning mathematics is beneficial for students [24]. Thus, the preparation of the design of the MCA Numeration questions is arranged based on the context of everyday life. A summary can be drawn from the results of these interviews, which will be presented in Table 2 below.

Table 2. Ability to solve MCA Questions

Number	Name	Numeracy Score	Literacy	Ability to solve MCA Questions
1	KR1	31	Do not like to understand reading	Low
2	KR2	38	Lazy to understand reading	Low
3	KS1	66	Can understand reading	Medium
4	KS2	68	Can understand reading	Medium
5	KT1	88	Can understand reading and implementation on questions	High
6	KT2	89	Can understand reading and implementation of questions	High

From Table 2 above, we can conclude that students who have good MCA problem-solving skills students must have good literacy skills. Because of good literacy skills, they can apply story questions that are changed in algebraic form. They will be able to work on questions and problems in everyday life so that with good literacy skills, they will be able to produce good numeracy skills to be applied in learning and will be helpful for their future. It follows the opinion of Puspaningtyas & Ulfa who state that literacy development is essential to note because it is an initial ability that every individual must possess to live in the future [23].

4. Conclusions

Based on the research that has been done, the researcher concludes that students can solve the MCA questions quite well. The MCA questions are given as many as 40 items with levels. From the results of this study through a test of 20 students, there were four students with low-level numeracy abilities, 13 with moderate-level numeracy abilities, and three with high-level skills. The results of interviews that have been carried out at each level are obtained in the categories of low literacy ability, medium literacy, and high literacy. With soft literacy skills, they have difficulty implementing reading in questions in the form of algebra or geometry. It can be concluded that students with low literacy skills have soft numeracy skills, so students' ability to solve MCA questions is also common. In the medium literacy category students, they like story questions and questions with contexts related to everyday life. These students have problems with forgetting formulas, so they are constrained in the process of working on questions. It can be concluded that students who have moderate literacy skills have low literacy skills.

The numeration is also reasonable, so the students' ability to solve the MCA questions is intermediate. The students are in the category of high literacy ability. They like story questions and questions with contexts related to everyday life because they can explore and implement our skills and understanding of existing formulas. However, they still have a little difficulty in solving types of questions that require knowledge. Moreover, more reasoning will take up much time in the work process. It can be concluded that students with high literacy skills have moderate numeracy skills, so students' ability to solve MCA questions is also high. From these results, a teacher must provide learning innovations in each category so that they will be able to improve literacy and numeracy skills so that students can work on MCA-type questions well.

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