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Identifying of emotional quotient junior high school students in mathematics

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ABSTRACT

This study aimed to determine the emotional intelligence of junior high school students, especially in managing emotions, recognizing emotions, and motivating themselves. This was quantitative study with survey design. There were 102 respondents participated in this research that were obtained based on purposive technique. The instruments used in this study were questionnaires and semi-structured interviews and data analysis using descriptive statistics, including mean, min, max, categorization, and percentage. From the results of the investigation that has been done, it is found that there is emotional intelligence of students in mathematics which is shown by the aspect of recognizing emotions which has a suitable category of 61.8% (63 of 102) students, the issue of managing emotions has an appropriate category of 53.9% (56 out of 102) students. The self-motivation aspect has a suitable category of 60.8% (62 out of 102) students. Students need to be allowed to develop direct experiences and thoughts on learning activities.

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1. INTRODUCTION

Education is a complex activity, broad dimension, and many variables that influence it. As a psychological process, education cannot be separated from the teaching and learning process, from the teaching perspective, the perpetrators are teachers/educators, or those who educate. Especially on education for the 21st century, in the curriculum of educational institutions oriented to create generations; Effective, innovative, and creative through integrating attitudes, as well as knowledge and skills [1-4]. Therefore, through the educational institution, the State makes it the goal of a curriculum [5, 6]. Therefore, since in college, all students are required to cooperate with colleagues. With this, the student must have the right attitude to work with his colleagues [7-11].

Mathematics is one of the subjects taught from elementary, secondary, and higher education [12]. Following the objectives of learning mathematics at the primary and secondary level is to prepare students so that in the world of education, they can always develop logically, rationally, critically, accurately, honestly, efficiently, and effectively. So, it is clear that the teacher should be able to create such an atmosphere that students are actively asking questions, answering questions, and crafty ideas. Knowledge gained by students based on student activity in learning, not a passive process though the teacher talks on education [12, 13]. Mathematics lessons are often interpreted as thinking patterns, organizing patterns, logical proofs, a language that uses terms that are defined carefully, clearly, and accurately represented by symbols and reliable

[14, 15]. Another factor that supports the success or failure of teaching mathematics is mastering the theory of mathematics teaching and learning and facilities that support the learning process. By mastering instruction and learning, students can follow the lessons well and can even motivate students to be interested in learning mathematics. Mathematical theory mastered by educators will apply to students if they can choose the right teaching and learning strategy, know the educational and learning objectives, or expect an approach and see whether students already have readiness or learning ability [16-18].

Attitudes are noteworthy in the lesson. A learning process in mathematics, an essential attitude, is owned by the students because it will affect them in the learning process [19-22]. Suppose the students have a positive attitude in learning the different students who have a negative attitude [23]. In understanding the cognitive aspects, it also takes an affective dimension, because students with the higher emotional issues will foster the critical and creative nature of the student. Attitudes are the likelihood of students giving a consistent, educated, negative, or positive reaction/response to an object [24, 25]. Attitude is the personality of an individual who is influenced by the behaviour associated with it. Student attitudes will be formed from outcomes and learning experiences that will give students emotional quotient [26].

The environment influences students' emotional intelligence, it is not fixed, but can change at any time. Therefore, parents' role in educating children at the age of five has a significant role in the formation of emotional intelligence. Emotional intelligence (EQ) skills do not conflict with intellectual intelligence (IQ) or cognitive abilities, but both interact dynamically with each other, both in the real world and conceptually. However, EQ is not influenced by heredity [26]. Goleman [27] explains that no one type of monolithic intelligence is essential for success in living life, but there are seven spectral bits of intelligence with seven main varieties. Interpersonal intelligence is the key to knowing oneself, including one's feelings and the ability to distinguish between these feelings and use them to guide behaviour [28]. Emotional intelligence has a role, not only in school and in academic success, but also in the progress of work and marriage [29-31]. The ability to motivate themselves, control emotions, and recognize students' emotions is not the same, each student has a different emotional intelligence. There are different levels of students' emotional intelligence and how they know themselves. Because the ability of emotional intelligence leads to superior performance even in intellectual careers. According to Kustyarini [31], EQ has a much more significant role than IQ. Meanwhile, according to Goleman [27] IQ alone is no more the only measure of success; emotional intelligence, social intelligence, and luck also play a significant role in one's success. Therefore, the purpose of this study is to look at emotional intelligence possessed by students.

2. RESEARCH METHOD

This was mixed methods research employed sequential explanatory. Mixed research with an explanatory sequential design is a research that takes quantitative data first, and continues with qualitative data collection [32, 33]. This study's design was applied because it was following the objectives of the study, where the aim was to find out the emotional intelligence of Junior High School Students towards Mathematics Subjects.

The research sample was obtained from 102 Junior High School 7 Jambi City education students who used a purposive sampling technique. Purposive sampling is a sampling technique based on the criteria of the researcher [34]. The requirements in this study were students with a high ranking of 3 people and 3 people ranked low from each class.

The study used questionnaires and interview instruments. The questionnaire has 16 valid statements with Cronbach alpha 0.72 with a Likert 4 scale, based on the theory of Goleman [28]. According to Goleman [28], students' emotional quotient has five aspects: recognizing themselves, managing emotions, motivating themselves, recognizing other people's emotions, and building relationships [29]. And using semi-structured interviews aimed at strengthening quantitative data. The data used by the SPSS program to look for descriptive. Descriptive statistics are presented in a summary frequency, for example, mode, mean, median, minimum, maximum, and standard deviation [35]. The categories of emotional quotient are shown in Table 1.

Table 1. Categorization of emotional intelligence

Category	Interval		
	Recognize emotions	Manage emotions	Motivate yourself
Very not good	6.0–10.5	5.0–8.7	5.0–8.7
Not good	10.6–15.0	8.8–12.5	8.8–12.5
Good	15.1–19.5	12.6–16.2	12.6–16.2
Very good	19.6–24.0	16.3–20.0	16.3–20.0

All data were obtained from emotional quotient questionnaires collected and calculated and assisted with the SPSS 21 application. In this study, quantitative data were analyzed using Mean, Median, Min, Max, and Percentage. Descriptive statistics are given to calculate the frequency, percentage, mean, median, min, and a max of the sample [34], followed by interviews used to strengthen the quantitative data results.

3. RESULTS AND DISCUSSION

3.1. Results

In this study, the novelty presented is identifying students' emotional intelligence. According to Goleman [28] students' emotional quotient has five aspects, namely recognizing themselves, managing emotions, motivating oneself, recognizing the emotions of others, and building relationships. However, in this study, what is used or seen is only the aspect of recognizing the emotions of others, managing one's own emotions, and motivating yourself [29]. The results can be seen in Table 2 to Table 4.

3.1.1. Recognize emotions

The results of the emotional intelligence questionnaire given and obtained and processed by the results that can be seen in Table 2. From Table 2, which came from 102 respondents from high school students in the good category, and after being processed and obtained the results using the SPSS 21 application program, it was found to recognize emotions in emotional intelligence having a suitable grade of 61.8% for 63 students from 102 total students, not good at 14.7% for a total of 15 students out of 102 total students, and very good 23.5% for 24 students out of 102 total students. Table 2 reveals Mean value of 17.5, Maximum Value of 22, and Minimum Value of 11.

Table 2. Results of indicators recognize emotions in emotional quotient

Range	Classification Responses	Total	Mean	Min	Max	%
6.0–10.5	Not very good	0	17.5	11.0	22.0	0.0
10.6–15.0	Not good	15				14.7
15.1–19.5	Good	63				61.8
19.6–24.0	Very good	24				23.5
Total		102				100

3.1.2. Managing your own emotions

The results of the questionnaire provided and have been obtained and processed the results using the SPSS 21 application that can be seen in Table 3. From Table 3, which came from 102 respondents from high school students in the good category, and after it was processed and the results obtained using the SPSS 21 application program, it was found to manage emotions in emotional intelligence having a suitable category of 53.9% for 56 students from 102 total students, not good at 16.6% for a total of 18 students out of 102 total students, very good 24.6% for 23 students out of 102 total students, an abysmal 4.9% for 5 students out of 102 total students. Table 3 shows that the Mean value of 14.2, Maximum Value of 18, and Minimum Value of 6.

Table 3. Results of indicators, managing their own emotions in emotional quotient

Range	Classification Responses	Total	Mean	Min	Max	%
5.0–8.7	Not very good	5	14.2	6.0	18.0	4.9
8.8–12.5	Not good	18				16.6
12.6–16.2	Good	56				53.9
16.3–20.0	Very good	23				24.6
Total		102				100

3.1.3. Motivate yourself

The results of the armature given and have been obtained and processed the results using the SPSS 21 application that can be seen in Table 4. From Table 4, which came from 102 respondents from high school students in the good category, and after being processed and obtained the results using the SPSS 21 application program, it was found to motivate yourself in emotional intelligence having a suitable grade of 60.8% for 62 students from 102 total students, not good at 15.7% for a total of 16 students out of 102 total students, very good 20.6% for 21 students out of 102 total students, an abysmal 2.9% for 3 students out of 102 total students. Table 4 presents mean value of 14.6, maximum value of 19, and minimum value of 7.

Table 4. The results of the indicators motivating themselves in emotional quotient

Range	Classification Responses	Total	Mean	Min	Max	%
5.0–8.7	Not very good	3	14.6	7.0	19.0	2.9
8.8–12.5	Not good	16				15.7
12.6–16.2	Good	62				60.8
16.3–20.0	Very good	21				20.6
Total		102				100

3.2. Discussion

The results of the questionnaire analysis in Table 2 show that the indicators recognize that emotions have a good ability of 61.8% (63 of 102) students in mathematics. This ability is demonstrated by students being able to recognize the feelings of friends who are nearby, not disturbing their friends when they are emotional. It can also be seen from the results of interviews that have been done.

"When you see that your friend is upset because of his low exam results, what action do you take?"
"I waited for my friend to calm down first, then approached him with encouragement."
"When you give him encouragement, but he is angry with you, what do you do."
"I will stay away for a moment until he calms down, then I can talk again."

From the results of the interviews conducted, it appears that students recognize their own emotions, even if they are also able to recognize their friends' emotions. Mayer and Salovey [36] states that emotional quotient consists of recognizing one's emotions or self-awareness, managing emotions, motivating oneself, recognizing other people's emotions or empathy, and building relationships. Recognizing self-emotion or self-awareness is the ability to recognize and realize feelings when they occur. Managing Emotions is the ability to handle feelings so that souls can be adequately expressed [37-39]. Recognizing other people's emotions or empathy is the ability to know other people's opinions. The psychological dynamics that occur in individuals who have high emotional intelligence when facing stress or conflict are as follows: when faced with stress or conflict, individuals who have high emotional intelligence will immediately recognize changes in emotions and their causes [40, 41]. He can explore these emotions objectively so that he does not dissolve into emotions. This makes him able to think of various ways of coping with relieving stress and resolving ongoing conflicts. Armed with this ability, he tried to manage his emotions so that emotions could be revealed appropriately. This means that the individual does not vent their emotions wildly or instead suppresses them.

The results of the questionnaire analysis in Table 3 show that the indicators of managing emotions in emotional intelligence have a good ability of 53.9% (56 of 102) of students in mathematics. This ability is shown by students being able to control their emotions when insulted by their peers when delivering answers that are asked and being able to control themselves in discussions while studying in groups.

"When you get talk that doesn't wear yourself, how do you respond?"
"I don't take what they say, because I don't feel like what they say."
"When you are presenting the results of your group discussion, but your classmates are noisy, and interfere with your group's presentation, how do you respond to this?"
"I would have been annoyed when it happened, but I was able to hold myself back from getting emotional by turning it back to the moderator."

Students with positive moods will be more concentrated in learning, which can support students' critical thinking skills [42, 43]. Dhingra, *et al.* [43] stated that positive moods arise to facilitate creative and integrative thinking that combines many perspectives and essential aspects of critical thinking.

The results of the questionnaire analysis in Table 4 show that the indicators of self-motivation in emotional intelligence have a good ability of 60.8% (62 of 102) of students in mathematics. This ability is demonstrated by students being able to motivate themselves when trapped in working on a given problem, can motivate themselves when they are down mentally by listening to music or looking for entertainment.

"When you have difficulty working on a problem in mathematics, what do you do to solve it?"
"I will listen to music using my airphone so as not to disturb my friends or seek other entertainment such as playing games, watching videos or asking friends to discuss."

In Table 4 it can be seen that the motivation possessed by students is good. This shows that motivation provides encouragement and efforts to fulfill or satisfy the need to achieve a goal. Every individual has a motivation within themselves to be able to believe in themselves and be creative. This is following Hong, *et al.* [44]; Wolters [45]; according to them, the most important thing that becomes human needs, namely: the need for achievement. Creative thinking is more dominant in intrinsic motivation than extrinsic [46-48]. Someone who can think creatively will do something, caused by internal impulses that will make a person proactive so that he can exceed normal limits [49, 50].

The emotional quotient is grouped into three levels: high emotional quotient, moderate emotional quotient, and low emotional quotient. According to Nwokah and Ahiauzu [50], high emotional quotient has characteristics such as socially stable, easy to get along, not easily scared or agitated, and a great responsibility. Students who have a high emotional quotient will be able to control themselves well, have the motivation to excel, be prepared to study with enthusiasm, work hard, be initiated, be creative, and have the right attitude. Medium emotional quotient, according to Yahaya, *et al.* [51] which is characterized by right psychological conditions, positive attitudes toward themselves and high self-esteem, as well as maturity in making decisions where students still have the proper motivation, and many students also have motivation lacking in learning mathematics. According to Schutte, *et al.* [52], by combining emotional learning in academic subjects, especially mathematics, students can learn how they deal with stress, anxiety, or frustration in mathematics classes. Thus, the need for attention by subject teachers to pay attention to emotional intelligence possessed by students.

4. CONCLUSION

The Conclusion should contain the confirmation of the problem that has been analyzed in the result and discussion section. The Conclusion should include the approval of the problem that has been investigated in the result and discussion section. The Conclusion should contain the confirmation of the problem that has been analyzed in effect and discussion section. Therefore, it is recommended that students need to be allowed to develop direct experiences and thoughts on learning activities.

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