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Analysis of Learning Motivation of Junior High School Students in Science Learning in Surabaya City

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Abstract: Student learning motivation is an important factor that influences the success of the learning process. This study aims to analyze the learning motivation of junior high school students in Surabaya City, especially in science learning, without the intervention of a particular learning model or approach. This research design uses a survey design with quantitative data collection methods. The learning motivation instrument is a learning motivation questionnaire containing 12 statements based on ARCS indicators: attention, relevance, confidence, and satisfaction. The sample of this study consisted of 88 students, 32 female students and 56 male students, and the sampling technique used was cluster sampling. The data obtained were analyzed descriptively quantitatively using a Likert scale to determine the average of each indicator of student learning motivation. The results showed that the average student learning motivation reached 71% and was classified in the high category, indicating that students have a fairly good learning motivation in science learning. Therefore, it can be concluded that this research indicates that students' overall learning motivation is on the good criteria. Unfortunately, good criteria did not occur in all indicators, where the confidence indicator showed the lowest score, so there is a need to improve the confidence aspect of students so that they are more active and confident in the learning process, such as using student-centered learning models.

Keywords: ARCS; Attention; Confidence Learning; Motivation; Relevance; Satisfaction; Science Learning.

Introduction

Learning motivation is a key to success in the learning process [1]. In today's learning, learning motivation is one of the important elements related to students' interest in learning the subjects given by teachers at school. Learning motivation is needed because it can increase students' enthusiasm for learning. Students who have learning motivation will be seen from their seriousness in the learning process through the activeness of asking questions, expressing opinions, concluding learning, and so on in accordance with learning provisions [2].

Student learning motivation can be interpreted as a driving force within students that can arise in the learning process and ensure continuity in their learning [3]. Science learning requires cognitive knowledge and the discovery process [4]. In science learning, one factor that influences the success of the learning process is student learning motivation [5]. Interactive science learning, based on observation, experimentation, and problem-solving based on natural phenomena, requires learning motivation [6]. High learning motivation can trigger students' curiosity and encourage them to participate actively in the learning process [7]. This active involvement will make students more interested and enjoy the science learning process. In addition, learning motivation can also make the science learning process more enjoyable [8].

Unfortunately, student learning motivation is still not in line with the reality that student learning motivation is still not optimal. This can be seen from the low desire of students to learn, their indifference to learning, their tendency to skip class, and their low interest in learning. Learning motivation is needed by students as a driving force within themselves that can arise in the learning process and ensure continuity in their learning [9].

Some previous researchers have researched to analyze the level of student learning motivation, such as research conducted by Almahasees et al. [10], Heyder et al. [11], Rohman & Karimah [12], Edu et al. [13] and Prananda & Hadiyanto [14]. Most research is always focused on increasing student learning motivation after applying a model or approach in the learning process. In line with this information, this study will analyze students' learning motivation using ARCS (Attention, Relevance, Confidence, Satisfaction) indicators that are rarely applied in science learning at the junior high school level, especially in Surabaya City, without the intervention of a particular learning method or model. This research needs to be done because it can get an objective picture of student learning motivation in conventional learning conditions usually applied in schools.

Based on these conditions, researchers are interested in conducting research related to student learning motivation, so this study aims to analyze each indicator used in the learning motivation of junior high school students in Surabaya City. The results of this study can later be used as a reference for teachers, schools and other parties engaged in education.

Research Methods

This research design is a survey design with a quantitative data collection method on the learning motivation of junior high school students in Surabaya City.

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The learning motivation instrument was adapted from Salmia's research instrument [15] with α Cronbach reliability of 0.610 and consists of 12 statements based on 4 ARCS indicators: attention, relevance, confidence, and satisfaction. The sample of this study consisted of 88 students, 32 female students and 56 male students, and the sampling technique used was cluster sampling. The data obtained were analyzed descriptively using a Likert scale to measure student learning motivation. Data analysis using the percentage formula

$$\text{Percentage (P)} = \frac{\text{Sum of the scores obtained}}{\text{Total score}} \text{ x } 100\%$$

[19]

The results of calculating the percentage of student learning motivation will be determined in the following category table.

Table 1. Categories of learning motivation

Interval	Categories
81-100	Very High
61-80	High
41-60	Simply
21-40	Low
1-20	Very Low

[19]

Results and Discussion

The survey design conducted in this study aims to examine the quantitative description of the learning motivation of junior high school students in Surabaya City. Survey design is a procedure in quantitative research where the researcher surveys a sample of people to add insights needed in researchers, such as attitudes, opinions, behaviours, or population characteristics (Sari et al., 2022). In this study, quantitative. A detailed profile of the recapitulation of the learning motivation of junior high school students in Surabaya City is presented in the following table.

Table 2. Profile of junior high school students learning motivation

	Frequency	Indicator			
		1	2	3	4
Male	56	75%	73%	62%	79%
Female	32	76%	70%	55%	76%

Based on Table 2, it can be seen that both male and female students have the lowest learning motivation in indicator 3, namely confidence, with a percentage of 62% for male students and 55% for female students. A complete picture of the average learning motivation score for all students can be seen in Table 3.

Table 3 shows that the lowest mean data is in indicator 3, namely confidence or self-confidence, and the highest is in indicator 4, namely satisfaction or satisfaction. Based on the standard deviation, the indicator with a low variation level in the data range is indicator 2 (Relevance or relevance). The results of the Likert scale analysis of the average of each indicator are grouped into four categories, as in Figure 1.

Table 3. Average Student Learning Motivation Score

Indicator	Attention	Relevance	Confidence	Satisfaction
Mean	3.034	2.883	2.371	3.110
Standard Error	0.094	0.086	0.401	0.091
Median	3.000	2.667	2.333	3.333
Mode	3.333	2.667	2.333	3.333
Standard Deviation	0.881	0.811	0.978	0.854

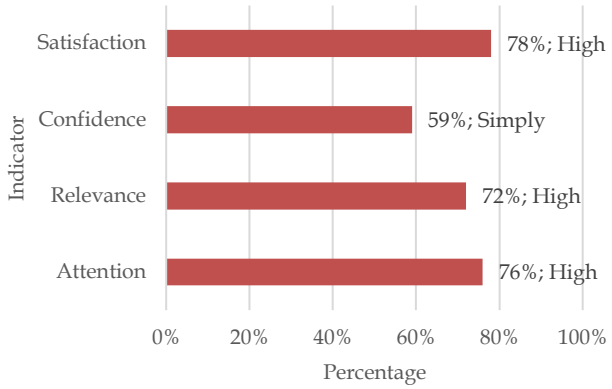

Figure 1. Total Percentage of Likert Scale for Each Indicator

Based on Figure 1, the results show that 3 indicators have a percentage above 70% in the high category, and one indicator has a percentage of 59% in the moderate category. The average of all indicators of student learning motivation is 71% and is classified in the high category. In this data, it can be seen that the frequency distribution of respondents' answers from the lowest indicator, namely confidence, can be seen in Table 4.

Table 4. Total Frequency of Indicator 3 Answers *(Confidence)*

No Item	Number of Items	Score	Frequency	Total Average Score	%
7, 8, 9	3	4	38	152	24%
		3	86	258	41%
		2	76	152	25%
		1	64	64	10%
Total			264	626	100%
Maximum Score					1.056
Average Percentage					59%
Criteria					Low

In Table 4, indicator 3 obtained 64 respondents' answers with the lowest total score and 38 with the highest score. In contrast, in Table 5, indicator 4, namely satisfaction, shows respondents' answers with the lowest score of 8 answers and the highest score of 55 answers. A complete description of the frequency distribution of respondents' answers from the satisfaction indicator can be seen in Table 5.

Table 5. Total Frequency of Indicator 4 (*Satisfaction*)

No Item	Number of Items	Score	Frequency	Total Average Score	%
10, 11, 12	3	4	101	404	49%
		3	110	330	40%
		2	34	68	9%
		1	19	19	2%
Total			264	821	100%
Maximum Score					1.056
Average Percentage					78%
Criteria					High

The research results on the learning motivation of junior high school students in Surabaya City, on average, showed that all indicators obtained 71%, which is a high category. The results of this study indicate that student learning motivation in science learning has good results. Based on four indicators, one indicator needs special attention because it is still categorized as sufficient: indicator 3 (confidence). Self-confidence is an attitude within a person to accept reality, have self-awareness, be optimistic, and have the ability to have everything they want [18]. Differences in self-confidence possessed by each individual will affect student learning motivation. Individuals who have high self-confidence will have good motivation because they always think positively and believe in their abilities [19].

Low student self-confidence is indicated by the behaviour of students who are passive in learning activities, afraid of being laughed at when arguing, and hesitant in answering questions given by the teacher. This situation aligns with researchers' findings in the field, where several students like to be alone because they cannot socialize with classmates. Some students are nervous about expressing their opinions, afraid to ask questions, and tend to be slow in concluding lessons. During the teaching and learning process, students look passive and wait for orders or instructions from the teacher.

Lack of self-confidence can be caused by various circumstances, which can be divided into internal and external factors. Internal factors include self-concept, self-esteem, and life experiences, while external factors include education, work, and family environment. Some ways to assist students in developing their self-confidence are to provide sentences or actions that can motivate students, let them participate in decision-making, provide difficult tasks or activities, and say thank you or congratulations [20].

Given the importance of learning motivation in learning, especially in science learning, improving it is a must. Science learning in schools tends to be one of the lessons that students are less interested in. Most students consider science learning scary, uninteresting, boring, and difficult. Therefore, teachers need to develop teaching skills for science learning so that students become more interested. In addition, strategies can be used to increase student learning motivation, namely with the right learning methods, models, and approaches.

Student learning motivation can be increased by learning models that use student collaboration. Collaborative learning models can invite students to discuss with a group of friends, and this discussion method is effective in improving student learning outcomes [21]. Learning models that can be used, such as discovery learning, inquiry learning, and so on, can increase student learning motivation. In addition, the model applied must be student-centered so that students become more active in learning. This active involvement will make students more interested and enjoy the science learning process [22].

Conclusion

Based on the research results, the overall learning motivation of junior high school students in Surabaya City is in a good category, with a percentage of 71%. The attention indicator scored the highest at 76%, followed by the satisfaction indicator at 78% and relevance at 72%. However, the confidence indicator showed the lowest score of 59%, so there needs to be an effort to increase student confidence to be more active in the learning process. Increase learning motivation by implementing a student-centered learning model so students are more involved and enjoy learning. This research is still limited to measuring indicators without empirical testing, so further research is needed to find effective strategies for increasing student learning motivation in Surabaya City.

Author's Contribution

Martha Damayanti contributed to the study's conceptualisation, data collection, and analysis. She also contributed significantly to the writing and revision of the manuscript. Siti Nurul Hidayati was responsible for the research design, literature review, and interpretation of the results. She also assisted in drafting and reviewing the manuscript.

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