The Effect of Intrapersonal and Interpersonal Intelligence on Mathematics Learning Motivation

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ABSTRACT

Learning motivation is an energy that exists within a person to do something by achieving a change in behavior which is characterized by feelings and reactions in the environment to achieve a goal to be achieved. The purpose of this study was to determine the effect of intrapersonal and interpersonal intelligence on students’ motivation to learn mathematics in Pringsewu Regency. This type of research uses descriptive quantitative research, using ex post facto research methods. The population in this study were fourth grade students of SD Negeri Cluster 1, Sukoharjo District, which opened 97 students. The data collection technique is using proportional random sampling technique. Researchers took samples using the formula from Taro Yamane and Slovin so that a sample of 78 respondents was obtained. Data analysis using descriptive statistical analysis techniques, and the final analysis (hypothesis testing) using multiple regression test. The results obtained indicate that, there is a significant impact between intrapersonal intelligence and interpersonal intelligence on the mathematics learning motivation of students in Pringsewu Regency, this is evidenced by the value of \( F_{\text{count}} > F_{\text{table}} \), or Ho is rejected and Ha is accepted.

Keywords: Intrapersonal, Interpersonal, Motivation, mathematics


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INTRODUCTION

Education is the process by which the individual will enrich himself in acquiring and conveying knowledge, so that the individual has life skills and is able to live the reality in his life according to his potential. Education aims to improve intellectual intelligence and academic ability both formally and informally with a variety of disciplines. Of the various disciplines, mathematics is considered one of the difficult and unpleasant subjects for most learners. Mathematics itself is a very important science in human daily life.

Rahayu & Kusuma (2019) said that "Mathematics is an important science as a provision in everyday life". Mathematics is useful to prepare a person to be able to face an ever-changing life, through the practice of logical and rational thinking, critical, careful, objective, creative, effective, and analytically calculated synthesis. Mathematics as one of the important subjects in supporting the improvement of human resources, becomes the basic foundation in solving various problems in everyday life (Sholihah & Mahmudi, 2015). This is in line with the purpose of mathematics education for the primary and secondary education levels, namely emphasizing the arrangement of reasoning and the formation of the personality of students in order to apply mathematics in their lives. Thus, mathematics becomes a very important subject in education and must be learned at every level of education.

Basically, every learner is an intelligent individual. Gardner (in Hanafi, 2019) states that each individual basically has seven different types of intelligence and uses it in a personal way that is not classical in its development in accordance with the growth and development of children. Each learner has a different intelligence from one to another. Intelligence is the ability possessed by individuals or children to adjust to their environment and to solve the problems they face well (Zefanya, 2018). The high low intelligence possessed by learners can affect students' understanding of the lessons given by educators so that it will also affect the high learning results obtained although it will not be separated by other factors. Of the three intelligences, emotional intelligence, or EQ (Emotional Quotient) consists of intrapersonal and intelligence.

Interpersonal and intrapersonal intelligence play an important role in mathematics. Intrapersonal intelligence is the intelligence of knowing what one's own strengths are and what weaknesses are in oneself (Munafiah, et al, 2018). "Intrapersonal intelligence in a narrow sense is a person's ability to know and identify all his desires and emotions (Afrina & Bektiningsih, 2018). While in a broad sense it is interpreted as the intelligence that the individual has to be able to understand himself" So it can be concluded that, intrapersonal
intelligence is the ability of learners in recognizing themselves and doing self-reflection. Learners who have intrapersonal intelligence tend to have independence to learn and have targets that must be achieved in learning. Interpersonal intelligence is a person's ability to understand and respond appropriately to the moods, temperaments, motivations and desires of others. The cause of all that often lies not in the inability of students, but because of emotional factors that affect students. In these conditions, the emotional intelligence factor plays a very important role (Maulana, 2019).

This plays an important role in positioning oneself in the perspective of others when discussing in learning. An individual who has good interpersonal intelligence, will have the ability and skills in creating a relationship, so that both parties are in a mutually beneficial situation. Today many educators are starting to realize that interpersonal intelligence is one of the most influential factors, especially in the teaching and learning process in schools (Rochmahwati & Afifah, 2018).

In general, in the teaching and learning process in schools’ students tend to be less motivated in mathematics learning, learners consider that mathematics is a difficult and unpleasant learning (Asiyah et al., 2019). But different if students already have motivation in learning mathematics and are able to work together in doing mathematics, gradually students will begin to understand the material and can solve problems ranging from easy problem levels to difficult levels easily and pleasantly.

Learners who are starting to be happy and motivated by mathematics will continue to improve their abilities and collaborate their abilities with others, they think that mathematics is a challenge that must be solved by the problem (Rani, 2020). So that students will produce satisfactory grades and excel in mathematics learning. So, it is very clear that intrapersonal intelligence and interpersonal intelligence have an effect on the motivation of learning mathematics learners. Learning at the education level will be successful when students have motivation in learning (Asiyah et al., 2019). Therefore, fostering learning motivation in students, is one of the duties and responsibilities of parents and educators. Parents and educators who are good at educating children will forever try to encourage students to move to achieve optimal learning goals.

Motivation is one of the internal factors that affect student learning outcomes. Motivation comes from the word "motive" which is interpreted as the power of effort that encourages a person to do something. In addition to self-motivation, the active role of students in independent learning also has a very important role in learning activities (Lestari, 2021). Motivation is a change in energy in a person that is characterized by the
emergence of "Feeling" and preceded by a response to the existence of goals (Rani, 2020). Motivation is what drives a person to do something. With the motivation of students can develop potential and intelligence in themselves optimally with a high level of confidence (Herwati, 2014: 41). But in fact there are still many learners who have not been motivated in learning subjects that they consider unpleasant and difficult such as mathematics (Novitasari, 2016).

This study was conducted to find out whether there is a significant influence between intrapersonal and interpersonal intelligence on the motivation of learning mathematics learners. In order for mathematics learning to be more interesting, it is necessary for a teacher to be creative in choosing the right learning model so that students are active and motivated in learning (Daen, 2020). Where there are still many learners who are passive during the mathematics learning process, many are still cheating, not doing tasks, and math repeat scores are still low. This can be due to the lack of understanding of educators regarding the importance of intrapersonal and interpersonal intelligence factors to the motivation of learners' learning.

RESEARCH METHODS

This research uses a quantitative approach with post facto Ex research methods. According to Siregar (2017: 4), "Post facto Ex research is research that conducts systematic empirical investigations, where researchers do not have direct control over independent variables, because phenomena are difficult to manipulate" (Sappaile, 2010). In this study free variables have occurred when researchers begin with observations of bound variables in a study. Post facto Ex research aims to find causes that allow changes in behavior, symptoms or phenomena caused by an event, behavior or things that cause changes in the free variable as a whole to have already occurred.

This research was conducted at the Elementary School of Group I of Sukoharjo Subdistrict. The variables used in this study are intrapersonal intelligence variables (X1) and interpersonal as free variables (X2) and motivation to learn mathematics students of grade IV Elementary School as bound variables (Y).

Figure 1. Research Design
Description:
\[X_1 = \text{Intrapersonal Intelligence}\]
\[X_2 = \text{Interpersonal Intelligence}\]
\[Y = \text{Motivation to learn mathematics students in grade IV elementary school}\]

The subject of this study was the fourth grade students of Sukoharjo Subdistrict Group 1 Elementary School which numbered 97 students with a research sample of 78 students and 19 students of the trial sample. The data collection techniques used are questionnaires and documentation. Respondents answered the question by choosing alternative answers that had been provided and adjusted to indicators of intrapersonal intelligence, interpersonal intelligence and learning motivation. Meanwhile, documentation is used by researchers to complete the documents needed at the reporting stage.

The data processing method used by researchers is descriptive statistics. The data analysis technique in this study consists of a normality test and a linearity test (Rani, 2020). As for the hypothesis test, researchers use multiple regression tests. Multiple regression tests are performed to determine the presence or absence of a significant influence between intrapersonal and interpersonal intelligence on learners' mathematical learning motivation. The hypothesis proposed in this study is whether there is a significant influence between Intrapersonal and Interpersonal intelligence on the motivation to learn mathematics students in Pringsewu Regency.

The first step that researchers take before answering a hypothesis is to perform descriptive statistical analysis. This descriptive statistical analysis is intended to determine the distribution of the spread of each variable questionnaire. Based on the results of the analysis that has been carried out, the results of the spread of intrapersonal intelligence, interpersonal intelligence and learning motivation in data analysis Table 1.

Table 1. Data Analysis Result Table Frequency Distribution Analysis, Interpersonal Intelligence and Learning Motivation

<table>
<thead>
<tr>
<th>N</th>
<th>Range</th>
<th>Min</th>
<th>Max</th>
<th>Sum</th>
<th>Mean</th>
<th>Std. Dev</th>
</tr>
</thead>
<tbody>
<tr>
<td>78</td>
<td>30.00</td>
<td>45.00</td>
<td>75.00</td>
<td>4819.00</td>
<td>61.7821</td>
<td>6.22865</td>
</tr>
<tr>
<td>78</td>
<td>31.00</td>
<td>39.00</td>
<td>70.00</td>
<td>4665.00</td>
<td>59.8077</td>
<td>8.26675</td>
</tr>
<tr>
<td>78</td>
<td>27.00</td>
<td>38.00</td>
<td>65.00</td>
<td>4624.00</td>
<td>59.2821</td>
<td>7.42914</td>
</tr>
</tbody>
</table>

Based on the results of the Descriptive Statistic in Table 1, it can be known that the intrapersonal intelligence instrument has the smallest value (minimum) which is 45, the largest value (maximum) is 75, and the average value (mean) is 61.7821. In interpersonal intelligence instruments it can be seen that the smallest value (minimum) is 49, the largest
value (maximum) is 70, and the average value (mean) is 59.8077. Meanwhile, in the learning motivation instrument, it can be seen that the smallest value (minimum) is 38, the largest value (maximum) is 65, and the average value (mean) is 59.2821. Furthermore, to find out the classification of the three variables can be seen in the value classification Table 2.

<table>
<thead>
<tr>
<th>No</th>
<th>Value Range</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>25-50</td>
<td>Rendah</td>
</tr>
<tr>
<td>2</td>
<td>51-75</td>
<td>Sedang</td>
</tr>
<tr>
<td>3</td>
<td>76-100</td>
<td>Tinggi</td>
</tr>
</tbody>
</table>

Based on the analysis that has been done, the three variables are categorized as medium. Furthermore, the results of the hypothesis test using multiple regression tests are obtained by sig values. for the simultaneous influence of X1 and X2 on Y is 0.000 < 0.05 and the $F_{hicount}$ value is 14,629 > $F_{table}$ 3.12, or Ho is rejected, and Ha is accepted. So it can be concluded that there is a significant influence and has an impact between intrapersonal intelligence and interpersonal on student’s mathematics learning motivation.

The results showed that the influence of intrapersonal intelligence has the smallest value (minimum) which is 45, the largest value (maximum) is 75, and the average (mean) is 61.7821 (medium category), while the influence of interpersonal intelligence has the smallest value (minimum) which is 49, the largest value (maximum) is 70, and the average (mean) is 59.8077 (medium category), and motivation has the smallest value (minimum) which is 38, the largest value (maximum) is 65, and the average (mean) is 59.2821 (medium category).

From the results of the data analysis showed that there was a significant and positive, this was evidenced by the $F_{hicount}$ value of 14,629 > $F_{table}$ 3.12, or Ho was rejected and Ha accepted. In line with this intrapersonal intelligence refers to the understanding of oneself in determining interests and goals when doing deeds. A person who has this intelligence is able to recognize various strengths and weaknesses that exist in himself, and is happy to introspect himself, correct his shortcomings and weaknesses, and then try to improve himself (Savitri, 2019).

While interpersonal intelligence shows more in a person's ability to be sensitive to the feelings of others, tend to understand and interact with others so that it is easy to socialize with the environment around him. This kind of intelligence is often referred to as social intelligence which includes the ability to make friendships with friends, lead,
organize, handle disputes between people, gain sympathy from others, enjoy finding ways to help others, like to do social activities, and like group activities (Savitri, 2019).

While self-learning motivation is influenced by intrinsic motivation and extrinsic motivation. Where intrinsic motivation is motivation that comes from within a person because of the desire or willingness to achieve goals and achievements. Intrinsic motivation does not require external stimulation but comes from within a learner (Susanti, 2019: 5). This motivation occurs because of the encouragement of a learner, with high curiosity, always trying or wanting to advance in the learning process.

Extrinsic motivation is motivation that comes from outside a person who arises because of external stimuli or stimuli, such as the gift of rewards to be given, a fun learning environment, interesting topics, inspiring teachers, challenges related to self-esteem, praise, and others (Susanti, 2019: 5). From the results of this study, it was obtained that the two intelligences above work together as a whole and integrated unity to increase the motivation to learn mathematics students. In addition, the two intelligences also have a significant influence on the motivation to learn mathematics students in SD Negeri group 1 Sukoharjo District Pringsewu Regency.

CONCLUSIONS AND SUGGESTIONS

Based on the results of the research conducted, it can be concluded that, "There is a significant influence between intrapersonal intelligence and interpersonal intelligence on the motivation of learning mathematics learners in Pringsewu Regency. This is evidenced by the sig value. for the simultaneous influence of $X_1$ and $X_2$ on $Y$, or $H_0$ is rejected and $H_a$ is accepted.

Suggestions that can be given by researchers include: First, the Principal, to further improve educators' knowledge regarding the importance of intrapersonal and interpersonal intelligence to learners' learning motivation. Second, class teachers, should pay more attention to the intelligence possessed by their learners, especially in intrapersonal and interpersonal intelligence to increase learners' learning motivation, especially in subjects that are considered difficult for learners. Third, learners, are expected to hone the intelligence that exists in him, especially in intrapersonal and interpersonal intelligence so as to increase learning motivation in himself and those around him.

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