THE INFLUENCE OF INTELLECTUAL INTELLIGENCE AGAINST STUDENTS' ACHIEVEMENT IN MATHEMATICS

Abstract

This study aimed to determine: (1) the level of intellectual intelligence of students. (2) the level of student's mathematics learning achievement. (3) the presence or absence of significant influence of intellectual intelligence on student's mathematics learning achievement. This research was conducted on 12 April until 29 April 2013 which is located at SMP Negeri 2 Wundulako. The population in this study were all students of class VIII SMP Negeri 2 Wundulako Lesson Year 2012/2013 which amounted to 110 people, where the samples used by researchers as much as 25% that is 28 people by using random sampling method. Data collection techniques for intellectual intelligence variables using intelligence test results, while for learning achievement variable using the value of report cards. Data analysis techniques used were statistical analysis and inferential statistical analysis. From the results of the study indicated that: (1) No students (0%) had intelligence on intelligent and very intelligent category, 1 student (3.75%) had intelligent intellectual intelligence, 5 students (17,86 %) had intelligent intellectual intelligence, 19 students (67.86%) had moderate intellectual intelligence, 1 student (3.57%) had average intellectual intelligence, 2 students (0% ) had less intellectual intelligence, and no students (0%) had very little intellectual intelligence; (2) The achievement of students' mathematics learning was in good category with the amount of 1 student (3,57%) had high learning achievement of math, 25 students (89,29%) got moderate learning achievement, 2 students 7.14%) got low mathematics learning achievement, and no students (0%) had very low mathematics learning achievement; (3). There was a significant influence between students' intellectual intelligence on mathematics learning achievement of students of grade VIII SMP Negeri 2 Wundulako.

Keywords: math intelligence, mathematics achievement, SMPN 2 wundulako

A. Introduction

Some students who have difficulty in solving problems given by the teacher. There are students who can solve the problems given by the teacher beyond the time limit given, and there are also students easily and quickly solve problems provided by teachers. This is due to differences in the level of intellectual intelligence of each student. Intellectual Intelligence is one of the factors that influence learning achievement. According Syah (in Suyanti, 2011: 2) states that the level of intellectual Quotient (IQ) of students cannot be doubted, it determines the level of students' learning ". Where normally individuals with high intellectual intelligence he will
have a proud achievement in his class, and with his achievements he will more easily achieve success.

Students as subjects in the learning process turn out to have different uniqueness among students one with other students, as disclosed Bustalin (in Suyanti, 2011: 3) “There are students who are fast in learning because of his intelligence so he can complete more teaching and learning activities faster than expected, some students are slow in learning where students of this class often miss lessons and take longer than expected for normal students, there are students who are creative in certain activities and always want to solve problems, and there are Also who failed to learn so that does not finish his studies at school. To overcome this teacher gives remedial teaching this shows that to achieve high achievement in learning, one must have high Intelligence Quotient, because intelligence is a potential stock that will facilitate in learning and in turn will result in optimal learning achievement”

B. Literature Review

In Latin, it is known as intellectus and intelligentia. In English it becomes intellect and intelligence. In the Indonesian language it becomes inteligensi or inteligensia which means the real use of intellectual power (Ummah, et al., 2009).

Walter and Gardner (in Andriyani, 2006: 187) “Intelligence is a capability that confers individuals to solve problems or products as a consequence of the existence of a particular culture.” Intelligence largely depends on the basis and the derivative. Education or the environment is not so influential to one’s intelligence.

Purwanto (in Hartantiningrum, 2007: 65-67) mentions the factors that influence the intelligence of the innate, the maturity of the body organs, the formation of the environment, the interests and the unique nature and freedom of choice in solving problems.

According to Indonesian Popular Dictionary (Soetrisno, 2010: 694) learning achievement is the result of learning that has been achieved from something that has been done or done, in this case is the result of learning. The notion is general in nature, which can be used specifically to indicate specific job performance. So that learning achievement is the result of learning achievement.

C. Methodology

The design of the relationship between the two variables of this study can be described as follows:

Which:

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X = \text{Intelligence Quotient (Independent variable)}
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Y = \text{Mathematics Learning Achievement (Independent variable)}
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This research was conducted on 12 April until 29 April 2013 which was held in SMP Negeri 2 Wundulako. The population in this study were all students of class VIII SMP Negeri 2 Wundulako Lesson Year 2012/2013 which amounted to 110 people, where the samples used by researchers as much as 25% that was 28 people by using random sampling method. Data collection techniques for intellectual quotient variable using intelligence tests, while for learning achievement variable using the value of report cards. Data analysis techniques used were statistical analysis and inferential statistical analysis i.e. Normality Test, Linearity test, and Hypothesis test (simple regression test).

D. Finding and Discussion

1. Findings

Score Intellectual Intelligence Class VIII SMP Negeri 2 Wundulako Kolaka has a minimum score of 80; Maximum score 122; Average 101.71; Median 102; Mode 98 and standard deviation of 10.551. Intellectual Quotient scores are grouped into eight categories: Smartest, Very Smart, Smart, Average Smart, Medium Average, Average Less, Less, and Very Less. Obtained as many as 0 students (0%) who have the category of Smartest, 0 students (0%) have very smart category, 1 student (3.75%) have Smart category, 5 students (17,86%) have Average Smart, 19 students (67,86%) have Medium Average, 1 student (3,57%) have Average Less category, 2 students (0%) have Less category, and 0 students (0%) have Very Less category. While the data of
mathematics learning achievement of students of grade VIII SMP Negeri 2 Wundulako obtained a minimum score of 64; Maximum 81; Average 70.50; Median 70.50; Mode 67 and standard deviation 4,026. Furthermore, if the score of Intellectual Intelligence is grouped into four categories namely High, Medium, Low, and Very Low then it is obtained by 1 student (3.57%) who have High category, 25 students (89.29%) have Medium category, 2 students (7.14%) have Low category, and 0 students (0%) have Very Low mathematics learning achievement.

Linear regression equation $\hat{Y} = 42.743 + 0.275X$, this means student achievement mathematics can be estimated if score of Intellectual Intelligence known that every increase of variable $X$ one unit will be followed by increase of variable $Y$ equal to 0.275 unit with constant price 42.4343. To see the linearity and significance of the regression, the results are summarized in table 1 analysis of variance (ANAVA) below:

Table 1. Results of Analysis of Regression Variance of Intellectual Quotient on Mathematics Learning Achievement.

<table>
<thead>
<tr>
<th>Variance Source</th>
<th>JK</th>
<th>df</th>
<th>RJK</th>
<th>$F_{\text{count}}$</th>
<th>$F_{\text{table}}$</th>
<th>Conclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>140452</td>
<td>28</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Regression (a)</td>
<td>140014,3</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Regression (b/a)</td>
<td>232,560</td>
<td>1</td>
<td>232,560</td>
<td>29,475</td>
<td>4,22</td>
<td>Significance</td>
</tr>
<tr>
<td>Residue (S)</td>
<td>205,154</td>
<td>26</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lack of Fit (LoF)</td>
<td>89,854</td>
<td>14</td>
<td></td>
<td></td>
<td>6,42</td>
<td></td>
</tr>
<tr>
<td>Error (G)</td>
<td>115,3</td>
<td>12</td>
<td></td>
<td>9,61</td>
<td>0,668</td>
<td>2,64</td>
</tr>
</tbody>
</table>

From table 1 above obtained $F_{\text{count}} = 29.56$ and $F_{\text{table}} = 4.22$ at significant level $\alpha = 0.05$ because $F_{\text{count}} (29.56) > F_{\text{table}} (4.22)$, hence concluded significant regression. As for linearity obtained $F_{\text{count}} = 0.668$ and $F_{\text{table}} = 2.64$ at $\alpha = 0.05$ level because $F_{\text{count}} (0.668) < F_{\text{table}} (2.64)$ then the regression is linear. This shows that there is a significant influence between Intellectual Quotient on mathematics learning achievement of students of grade VIII SMP Negeri 2 Wundulako Kolaka with determination coefficient obtained $r$ value = 0.521 (52.1%).

2. Discussion

Based on the result of regression analysis of Intellectual Quotient data with mathematics learning achievement obtained by regression equation $\hat{Y} = 42.743 + 0.275X$. Referring to the linear regression estimation function, it is seen that the constant value of 42.743 is the prediction score of student’s mathematics learning achievement without supported by Intellectual Intelligence score, it shows that every change one unit of Intellectual Intelligence score causes the increase of student’s mathematics learning achievement equal to 0.275. After the significance test and kelinearan regression obtained a conclusion that the regression equation can be used to predict the score of students’ mathematics learning achievement if the score of Intellectual Quotient is known.

Based on the results of data processing and obtained data $r^2 = 0.521$ or equal to 52.1%, which means that 52.1% mathematics learning achievement is determined by Intellectual Quotient on mathematics learning achievement, while the rest is determined by other factors.

E. Conclusion

1. Intellectual Quotient of grade VIII students of SMP Negeri 2 Wundulako belongs to Medium Average category, with average score of 101.71; Minimum score 80; Maximum score 122; Median 102; Mode 98; and standard of deviation of 10.551. This shows that Intellectual Quotient of grade VIII students of SMP Negeri 2 Wundulako Kolaka is good.

2. Mathematics learning achievement of grade VIII SMP Negeri 2 Wundulako Kolaka included in medium category, with score average 70.50; Minimum score 64; Maximum score 81; Median 70.50; Mode 67; and a standard of deviation of 4.026. This shows that the achievement of learning mathematics of class VIII SMP Negeri 2 Wundulako Kolaka is classified as good.

3. There is a significant positive influence of intellectual quotient of students with the achievement of mathematics learning of grade VIII students of SMP Negeri 2 Wundulako in 2012/2013, which $F_{\text{count}} (29.475) < F_{\text{table}} (4.22)$ at significant level $\alpha = 0.05$ indicated with regression equation $\hat{Y} = 42.743 + 0.275X$, determinat coefficient ($r^2$) equal to 0.521 or 52.1%. This shows that students’ intellectual Quotient gives positive contribution or good support in improving student’s mathematics learning achievement.
References