Relationship Between Naturalis, Spatial-Visual, and Interpersonal Intelligences with Biology Learning Outcomes of Student Grade X Interest Linguistics at Senior High School (SMAN 1), V Koto Kampung Dalam

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ABSTRACT
This research is a descriptive study conducted in April in grade X language class interest in biology at SMAN 1 V Koto Kampung Dalam Padang Pariaman 2018/2019 academic year. The sampling technique is simple random sampling. The research instrument used MI Questionnaire specializing in three intelligences, namely naturalist intelligence, spatial-visual intelligence, and interpersonal intelligence. Hypothesis is tested by using Pearson product moment correlation test The result was indicate that each intelligence on naturalistic intelligence, spatial-visual intelligence, and interpersonal intelligence has positive relationship with learning outcomes grade X of language class cross interest in biology at SMAN 1 V Koto Kampung Dalam. The most dominant intelligence of grade X language student cross interest in biology is spatial-visual intelligence
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1. INTRODUCTION

One important characteristic of students that teachers need to understand as educators is their individual talents and intelligence. Teachers who do not understand the intelligence of students will have difficulty in facilitating the process of developing individual potential to realize their ideals. Basically, intelligence occupies an important position in the world of education, and must be seen as a whole but often intelligence is understood partially by some teachers. According to Amir (2013: 2), every child born has a certain talent and they are intelligent by bringing their own potential and uniqueness that allows them to be smart.

According to Sardiman (2001: 143), in the learning process in schools, teachers have many roles, including: as a motivator the teacher must be able to stimulate and provide encouragement to dynamize the potential of students, guide and direct the learning activities of students in accordance with the desired goals, as the originator of ideas in the learning process, provides facilities in the learning process, assesses the achievements of students in the academic field as well as social behavior. To facilitate this roles, the teacher should know the condition of the students both physically and psychologically. One of the psychological conditions of the students is intelligence.

Intelligence is the ability to see a pattern and describe the relationship between patterns in the past and knowledge in the future. Children's intelligence can be shown in many ways whether through words, numbers, music, pictures, physical activities (motor skills) or social-emotional ways. Thus, many of the results of intelligence research suggest the parents give a lot of experience and stimulation to their children. Ahsan (2015: 25), said that the stimulation and sensation of intense experience is useful for arousing the intelligence of students which is applied to the concept of intelligence theory called "Multiple Intelligences (MI)".

Multiple Intelligences is a theory of intelligence that was invented by Howard Gardner, a figure in education and psychology. Multiple Intelligences consist of linguistic intelligence, logic-mathematical intelligence, visual-spatial intelligence, gesture intelligence, musical intelligence, interpersonal intelligence, intrapersonal intelligence, naturalist intelligence (Jahja, 2011: 397-400). Everyone has MI at different levels. Therefore, every teacher should be able to understand the intelligence and abilities of each student well, because the conditions of students in the class are different and have different levels of intelligence. This is consistent with the teacher's role as a motivator, facilitator, and director. According to Sardiman (2001: 143), as a motivator a teacher is able to improve and develop student learning activities. The teacher as a facilitator provides facilities in the learning process. The teacher as the director must be able to guide and direct the learning activities of students in accordance with the goals they aspire to.

Based on observations at SMAN 1 V Koto Kampung Dalam Padang Pariaman, there are still teachers who are not quite right in choosing learning strategies. Teachers are still focused on one learning method without variations in teaching and they still doesn't know what MI is. This causes students who are active in learning will get bored more quickly and eventually students will be lazy to pay attention to the teacher in explaining the lesson. Things

like this can cause the learning outcomes obtained are not as expected. To prevent lack of focus and lack of attention of students to the teacher in the learning process the teacher should know the condition of the students, one of them is knowing the level of MI of students.

Multiple Intelligences are very important to be known by teachers and students. There are several benefits that can be obtained by knowing the level of Multiple Intelligence of students, both for schools and for students themselves. Selaras (2014: 23), stated some of the benefits of MI for students and schools, for students if the level of MI is known it can increase self-confidence and help students to choose majors. For schools, by knowing the level of Multiple Intelligence students can help teachers be more focused in the learning process, help classify students, be able to approach students according to the type of intelligence they have. In addition, by knowing the level of MI students, teachers can develop students' potential optimally and can choose the right strategy in the learning process to maximize learning outcomes.

Selaras (2014: 23) stated that the level of intelligence is not used one by one, but can be used at a time simultaneously and complement each other. An educator must pay attention to each student's intelligence so that their intelligence potential can be developed to the maximum. Basically there are no stupid students, all humans have multiple intelligence, however, only a few intelligences are prominent. This is caused by a person's innate potential or potential which is usually trained from the environment around them. Sarwono (2009: 164) said the level of Multiple Intelligence of students is also influenced by several factors, including; hereditary factors; environmental factor; as well as the maturity factor, this maturity factor is closely related to a person's age. Hartshorne (2015: 438) says that human thought will develop better as we get older, with that thought a person will be better off in judging himself. Hartshorne (2015: 438) said that human thought will develop better as we get older, with that thought someone will be better off in assessing oneself.

2. MATERIALS AND METHODS

This research is a descriptive study that aims to reveal the level of MI students of class X in language specialization cross-interest biology of SMAN 1 V Koto Kampung Dalam Padang Pariaman 2018/2019 academic year. The study population was a Class X language specialization cross-interest biology in SMAN 1 V Koto Kampung Dalam Padang Pariaman with a total of 30 students. Sampel diambil menggunakan teknik *total sampling*. Samples were taken using total sampling technique. Student MI levels were obtained using an instrument in the form of a modified MI questionnaire from Selaras (2014: 84) that was valid consisting of 74 statements.

3. RESULT AND DISCUSSION

The average score of the MI questionnaire distribution of students in Table 1 follows.

Table 1. Average MI Score of Students in Class X language specialization cross-interest biology in SMAN 1 V Koto Kampung Dalam Padang Pariaman

No.	Type of Intelligence	Average
1.	Visual Spatial Intelligence	2,82
2.	Intrapersonal Intelligence	3,06
3.	Naturalist Intelligence	3,15

3.1. Student Learning Outcomes

Student learning outcomes obtained from the final test score of Biology Odd Semester 2018/2019 Academic Year at SMAN 1 V Koto Kampung Dalam. The average score is 71.22

3.2. Normality test

In this study a normality test was done using the Liliefors test with a significant level $\alpha = 0.005$. The recapitulation of the Normality test results can be seen in Table 2.

Table 2. Recapitulation of Data Normality Test Results

Parameter	L_{count}	L_{table}	Explanation
Visual Spatial Intelligence	0,1067	0,1566	Normal
Intrapersonal Intelligence	0,0984		
Naturalist Intelligence	0,1276		
Biology Learning Outcomes	0,1191		

Based on the results of the normality test, it is known that the data obtained are normally distributed because of $Lcount<L_{table}$.

3.3. Correlation Analysis

Analysis of data about the relationship between MI and student learning outcomes using the Pearson Product Moment correlation formula. The results of the calculations can be seen in Table 3.

Table 3. Correlation of Multiple Intelligences with Learning Outcomes

Correlation aspect		Correlation coefficient	Correlation Criteria
Visual Spatial Intelligence	Learning Outcomes	0,38	weak
Intrapersonal Intelligence		0,04	Very weak
Naturalist Intelligence		0,33	weak

3.4. Determinant Coefficient

The determinants of MI with learning outcomes can be seen in Table 4.

Table 4. The Determinants Coefficients of MI with Learning Outcomes

No.	Parameter		Determinant Coefficient (%)
1	Visual Spatial Intelligence	Learning Outcomes	14,44
2	Intrapersonal Intelligence		0,16
3	Naturalist Intelligence		10,89

Table 5. Recapitulation of t-Test Results

No.	Parameter		T_{count}	t_{table}
1.	Visual Spatial Intelligence	Learning Outcomes	2,24	2,04
2.	Intrapersonal Intelligence		0,22	2,04
3.	Naturalist Intelligence		1,92	2,04

Based on the results of the MI questionnaire distribution, it was found that the dominant level of intelligence possessed by students was spatial-visual intelligence and was followed by naturalist intelligence, intrapersonal intelligence. The level of intelligence each student has varies from one to another. Motivation and teaching from teachers play an important role in the successful development of each student's intelligence. Chatib (2015: 75) stated that each student has the potential to develop each type of intelligence. Furthermore, Suarca (2005: 86-87) stated that knowledge of MI in students helps to optimize understanding of students, so that teachers can optimize the dominant intelligence in students.

3.4.1. Spatial-Visual Intelligence

Based on the results of the study, an average spatial-visual intelligence score of 2.82 was obtained. Students prefer learning by using interesting learning media, such as pictures or with interesting observation objects, such as using power points, torso, etc. However, in the learning process teachers rarely use those media. This is what causes the learning process to not be held properly. This is in accordance with Selaras research (2014: 28), that the learning process for students with spatial-visual intelligence can use interesting instructional media such as: animation, chart, props (objects that can be observed, both in fresh and preserved condition).

3.4.2. Intrapersonal Intelligence

Based on the results of the study, the average interpersonal intelligence score of students was 3.06. Students who have dominant intrapersonal intelligence are able to understand themselves and they are able to control themselves in conflict situations. Students who have good intrapersonal intelligence recognize themselves and their limitations so they can express themselves well. Suparno (2004: 41) explains that intrapersonal intelligence is the ability of a person related to self-knowledge and the ability to explain about himself/herself precisely and really. Furthermore, Fatonah (2009: 241) stated that intrapersonal intelligence can be developed by learning to accept oneself, both weaknesses and strengths that exist in yourself.

3.4.3. Naturalist Intelligence

Based on research results, it is known that the average score of naturalist intelligence is 3.15. One example of a learning process that optimizes the naturalist intelligence of students is by learning directly into nature or students learning outside the classroom. This is consistent with Selaras research (2013: 29-30) that, students with naturalist intelligence prefer to learn through activities outside the classroom, traveling to the outdoors, other physical activities, and being sensitive to the surrounding environment. Furthermore Armstrong (2003: 23), stated that naturalist intelligence involves the ability to recognize natural forms around us such as birds, flowers, trees, animals, and other fauna and flora

4. CONCLUSION

There are differences in the MI levels of students in Class X language specialization cross-interest biology in SMAN 1 V Koto Kampung Dalam Padang Pariaman. The most dominant intelligence of grade X language student cross interest in biology is spatial-visual intelligence.

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