International Journal Pedagogy of Social Studies

Visual-Spatial and Intrapersonal Intelligence: Identification Its Role in The Learning Outcomes of Students in Islamic Schools

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Abstract— This study aims to identification of visual-spatial intelligence and intrapersonal intelligence and their relationship to the learning outcomes of social studies students of Islamic school. The study population was students of Al Azhar Islamic Junior High School Banda Aceh, Indonesia and taken a sample of 50 students using random sampling techniques. The results of the multiple correlation coefficient analysis are 0.375, which means that there is a low relationship. The effect of being given visual-spatial intelligence and intrapersonal intelligence with social studies learning outcomes is 14.07% and the remaining 85.93% is influenced by other variables outside the research. Hypothesis testing shows that there is a significant relationship between visual-spatial intelligence and intrapersonal intelligence with learning outcomes of social studies. This finding is expected to be used by teachers in developing learning methods that can hone various types of intelligence in students to provide an influence for improving learning outcomes.

A. INTRODUCTION

Until now there are still many who think that good or bad learning outcomes are determined by someone's intellectual intelligence, even though the essence of intellectual intelligence is intelligence that is only seen based on mathematical and language skills (Gani, Safitri, & Mahyana, 2017). Actually there are various other types of intelligence that if developed properly will provide positive results that support the success and success of a person, especially in a student who must try to achieve learning outcomes based on established completeness criteria (Setiawan et al, 2020).

In 1983, Gardner proposed the "multiple intelligence theory" and brought a new perspective to the intelligence issue (Yurt & Polat, 2015). Gardner (2013) suggests that the concept of intelligence is not always narrowly assessed only based on intellectual intelligence but can be seen from various other skills through a broader spectrum, in which there is the ability

of imagination, creativity, and ability to solve problems. Such intelligence is known as multiple intelligence. The multiple intelligences theory (MIT) is not only in the way of understanding human behavior and cognition, but also the modus operandi of researchers, teachers and examiners (Perez & Ruz, 2014). The types of intelligence referred to by Gardner are linguistic intelligence, logical-mathematical intelligence, visual-spatial intelligence, kinesthetic intelligence, musical intelligence, interpersonal intelligence, intrapersonal intelligence, naturalist intelligence, and existentialist intelligence.

Visual-spatial intelligence is a term inspired by the concept of visual intelligence (Mulyadi et al, 2017). Visual-spatial intelligence is the ability to accurately and accurately capture the world of space and transform these visual-spatial perceptions in various forms, including thinking intelligence in the form visualization, three-dimensional images and shapes and sensitivity to balance, relations, colors, lines,

and spaces visual. Visual-spatial intelligence is interpreted as the intelligence that promotes visual-spatial reasoning through the use of charts, graphs, maps, tables, illustration, arts, puzzles, many other costumes and material (Mulyadi et al, 2017). Visual-spatial intelligence education has been neglected (Diezmann & Watters, 2000).

Intrapersonal intelligence is a complex set of knowledge and abilities pertaining to one's self. At its core, intrapersonal intelligence involves accurate self-representation (including both strengths and limitations) that allows a person to effectively manage his or her life (Shearer, 2009). Intrapersonal intelligence is the most basic factor in a person because the intelligence determines what the concept of one's understanding of himself is, the form of self-adjustment, feeling, motivation, attitude and control of the strengths and weaknesses that exist in him. This intelligence, therefore, is a key to developing other intelligences (Perez & Ruz, 2014). This intelligence is needed in any lesson because it adjusts someone to the difficulties that are found, motivates themselves to continue to study hard, and optimizes learning planning appropriately which can provide good learning outcomes as well.

All students basically have visual-spatial intelligence and intrapersonal intelligence at levels and levels that are different from each other, including those influenced by age and gender (Prokýek & Štppek, 2016). According to the multiple intelligence approach, each individual has different potential of each intelligence area. This gives the individual differences in the teaching/learning process (Yurt & Polat, 2015). Visual-spatial intelligence and intrapersonal intelligence possessed by students, if developed optimally both in the family environment and in the school environment, will provide many benefits to their skills in solving problems themselves and the community later. These skills are one of the success factors of students in the future.

Social studies is a subject that aims to develop sensitivity to social conditions and skills in solving all problems that exist in their environment. The subject of social studies specifically includes several intelligences, including visual visual-spatial (space/living conditions) and intrapersonal (self-awareness). Al Azhar Islamic Junior High School is an Islamic-based educational institution in Banda Aceh. Nevertheless social studies is a

compulsory subject at Al Azhar Islamic Junior High School. Based on the results of a preliminary study of researchers at Al Azhar Islamic Junior High School Banda Aceh, it is known that the learning outcomes of students' social studies are not good. This can be seen in the results of the odd semester 2017/2018 academic year exam where most of the students have not yet achieved the minimum completeness criteria of 64.

The low learning outcomes of social studies at Al Azhar Islamic Junior High School according to the teacher's explanation are caused by a variety of factors, including the limited use of instructional media, learning methods that do not vary and because of the low motivation of student learning. This teacher's narrative is essentially in line with some of the findings of previous research, including Mustofa (2017) research findings that the use of appropriate learning media in learning social studies can improve students' psychomotor skills, especially in understanding the visual-spatial shape and condition well. The next study by Nurjanah (2016) also showed that there was a positive and significant correlation between intrapersonal intelligence of students with learning outcomes in social studies.

B. METHOD

Based on the background of the problem, the author is interested in conducting a study that aims to determine the relationship of visual-spatial intelligence and intrapersonal intelligence to the learning outcomes of social studies students of Al Azhar Islamic Junior High School Banda Aceh. The findings of this study are expected to be the basis for teachers in developing and implementing methods of learning social studies that can hone various types of intelligence in students so as to provide an influence on improving learning outcomes.

The population in this study were all students of class VII and VIII, amounting to 96 students. Sampling uses a random sampling technique with the calculation formula for sample size by Bungin (2005). Based on the results of calculations with the formula by Bungin (2005) obtained the number of samples is 50 students.

Data collection used in this study were tests, questionnaires and documentation. The test is used to measure the level of visual-spatial intelligence, the questionnaire is used to determine how visual-spatial intelligence and

intrapersonal intelligence and documentation are used to obtain learning outcomes in Social studies. The instrument of visual-spatial intelligence and intrapersonal intelligence was compiled based on the opinions of Yusuf & Nurihsan (2009) which were developed from Howard Gardner's theory of multiple intelligences. Before being used for data collection, research instruments have been tested for validity and reliability.

Hypothesis testing is done through multiple correlation analysis and significance testing is done by the F test with the formula:

The research approach used in this study is a correlational quantitative approach. The study was conducted in March-April 2019 at the Al Azhar Islamic Junior High School Banda Aceh, Indonesia

$$F_{count} = \frac{R^2 / k}{(1 - R^2)/(n - k - 1)}$$

The statistical hypothesis formulation in this study are:

Ho: There is no positive and significant relationship between visual-spatial intelligence and intrapersonal intelligence with learning outcomes in social studies

Ha: There is a positive and significant relationship between visual-spatial intelligence and intrapersonal intelligence with learning outcomes in social studies

Based on the conclusion by Riduwan (2012), if $F_{count} > F_{table}$ at the significance level of 5% or 0.05 then Ho is rejected, meaning there is a positive and significant relationship between several independent variables with the dependent variable.

C. FINDINGS AND DISCUSSION
1. Level of Visual-Spatial Intelligence

Measurement of visual-spatial intelligence level of Al Azhar Islamic Junior High School students was carried out through tests and questionnaires. The results of measuring the level of visual-spatial intelligence can be seen in Figure 1:
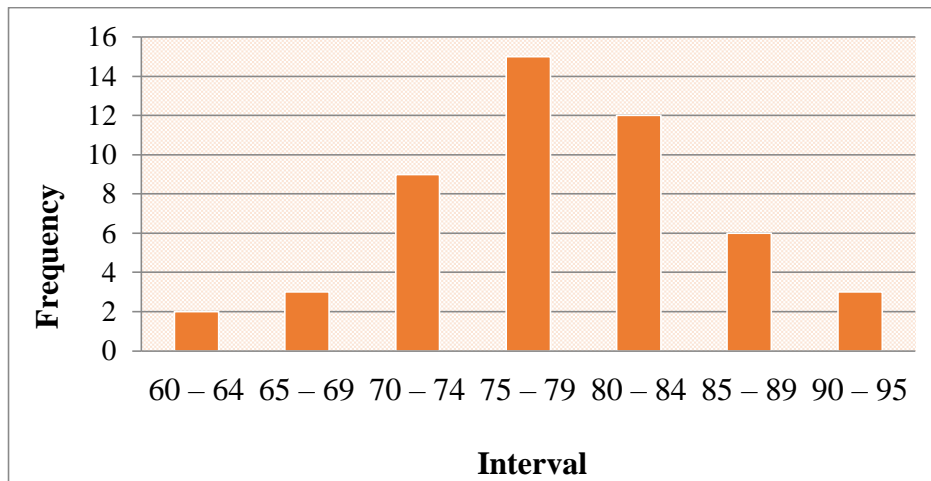

Figure 1. Graph of the Frequency Distribution of Visual-Spatial Intelligence Scores

The category of visual-spatial intelligence level of Al Azhar Islamic Junior High School students can be seen in Table 1.

Table 1. Categories of Student Visual-Spatial Intelligence Levels

Score	Frequency	Percentage	Category
> 85	8	16%	High
71–85	37	74%	Medium
< 71	5	10%	Low
Total	**50**	**100%**	

Based on Table 1, it can be concluded that most of the levels of visual-spatial intelligence of students in Al Azhar Islamic Junior High School in the moderate category, which is between 71-85 with an average of 78.26.

2. Level of Intrapersonal Intelligence

The measurement of intrapersonal intelligence level of Al Azhar Islamic Junior High School students was carried out by questionnaire. The results of measuring the level of intrapersonal intelligence can be seen in Figure 2:
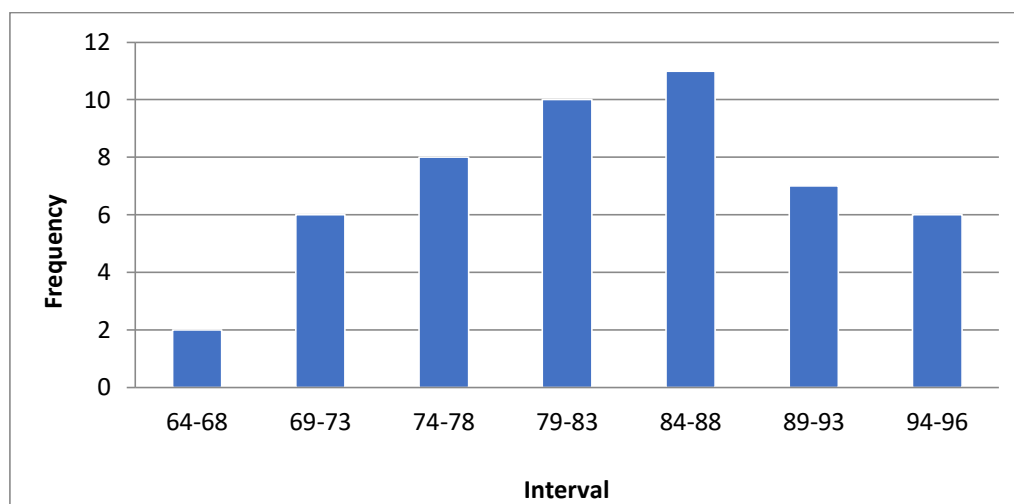

Figure 2. Graph of the Frequency Distribution of Intrapersonal Intelligence Scores

The category of intrapersonal intelligence level of Al Azhar Islamic Junior High School student can be seen in Table 2.

Table 2. Categories of Student Intrapersonal Intelligence Levels

Score	Frequency	Percentage	Category
> 91	8	16%	High
74–91	34	68%	Medium
< 74	8	16%	Low
Total	**50**	**100%**	

From Table 2 it is known that the level of intrapersonal intelligence of Al Azhar Islamic Junior High School student is in the moderate category, which is as much as 68% of students.

3. Level of Learning Outcomes in Social Studies

Social studies learning outcomes of Al Azhar Islamic Junior High School student were obtained from the parent school data, in the form of semester exam scores. The distribution of the Social studies learning outcomes is depicted in Figure 3.
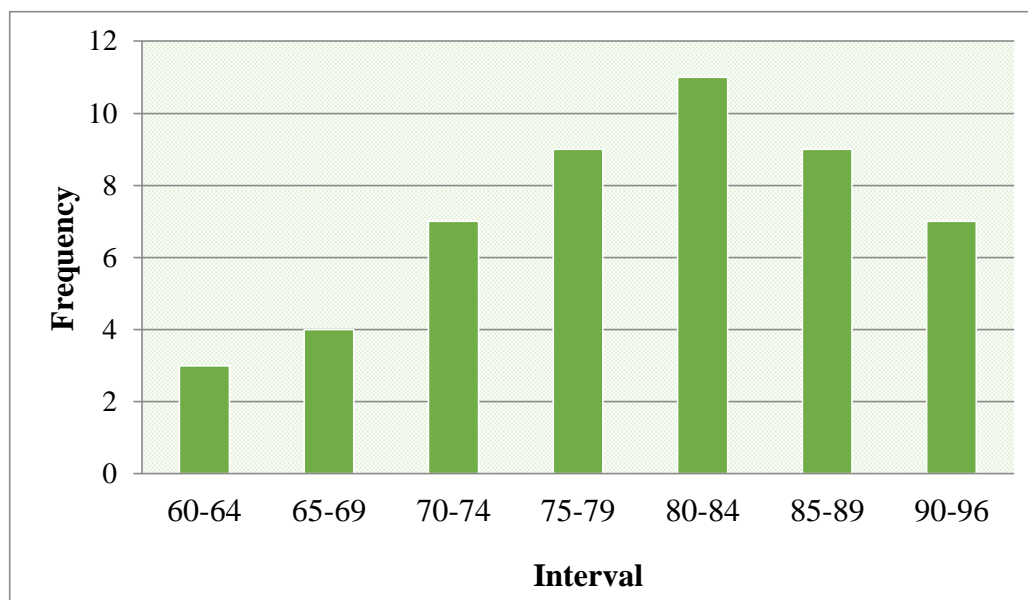
Figure 3. Graph of the Frequency Distribution of Social Studies Learning Outcomes

The category of social studies learning outcomes level of Al Azhar Islamic Junior High School student can be seen in Table 3

Table 3. Categories of Learning Outcomes for Social Studies

Score	Frequency	Percentage	Category
> 89	7	14%	High
71 – 89	36	72%	Medium
< 71	7	14%	Low
Total	**50**	**100%**	

From Table 3 indicates that social studies learning outcomes of Al Azhar Islamic Junior High School student are in the moderate category, which is as much as 72% of students.

4. Double Correlation Test

The multiple correlation test serves to find the magnitude of the relationship and the contribution of two independent variables namely visual-spatial intelligence (X_1) and intrapersonal intelligence (X_2) simultaneously (together) with the dependent variable that is the learning outcomes of social studies (Y). Simple correlation coefficients and multiple correlations that have been calculated in detail can be seen in Table 4.

Table 4. Results of Simple Correlation and Double Correlation Calculations

No	Correlation	Correlation Coefficient	Interpretation Correlation Coefficient
1	$RX_1.Y$	0,3637	Low
2	$RX_2.Y$	0,19	Very Low
3	$RX_1.X_2$	0,28	Low
4	$RX_1.X_2.Y$	0,375	Low

Based on Table 4 it can be concluded that overall the simple correlation coefficient and multiple correlation are in the low category. Seen partially the level of the relationship between visual-spatial intelligence (X_1) and learning outcomes of social studies (Y) is a positive and low relationship that is equal to 0.3637. The level of the relationship between intrapersonal intelligence (X_2) and learning outcomes of Social studies (Y) is 0.19 which means the relationship between X_2 and Y is positive but very low.

Furthermore, the correlation coefficient between visual-spatial intelligence (X_1) and intrapersonal intelligence (X_2) is 0.28 which also means having a positive relationship but in the low category. The same thing applies to the multiple correlation between visual-spatial intelligence (X_1) and intrapersonal intelligence (X_2) with the learning outcomes of social studies (Y) which have a correlation coefficient of 0.375, which means there is a positive relationship in the low category.

Although overall the correlation coefficient is in the low category, the positive value indicated indicates that any increase that occurs in spatial intelligence and intrapersonal intelligence will affect the increase in learning outcomes of social studies. Conversely, any decline that occurs in spatial intelligence and intrapersonal intelligence will also affect the decline in learning outcomes in social studies.

The results of the calculation of the Ftest obtained F_{count} = 3.85 and F_{table} = 3.20 at the significance level of 5%. In accordance with the rules of decision, namely if F_{count}> F_{table} or 3.85>3.20 then Ha is accepted, which means there is a significant relationship between visual-spatial intelligence and intrapersonal intelligence with learning outcomes of social studies students of Al Azhar Islamic Junior High School Banda Aceh.

Visual-spatial intelligence is the ability of one's imagination towards what he sees in the surrounding space which is then explored again in thinking power. Visual-spatial intelligence, aptitude manifest as a particular for thinking and communicating spatially (Diezmann & Watters, 2000). It is continuous with Social studies subjects whose scope is closely related to spatial matters so that if this type of intelligence is used properly in learning activities it will also have a good influence on learning outcomes.

The results of this study prove there is a positive and significant relationship between visual-spatial intelligence with learning outcomes of Social studies but in the low category. Based on the value of visual-spatial intelligence tests and questionnaires, the sample fulfills many indicators and has a medium spatial intelligence but has not been able to provide a solution for solving problems. This indicator is the indicator that is most closely related to Social studies lessons because in learning activities students are often trained to express their opinions in completing daily social problems, especially in group discussions so that it is thought to be the cause of not yet strong spatial intelligence affecting learning outcomes in Social studies.

The results of this study are in line with Martha's research (2016:19) which shows a positive relationship in the very low category between visual-spatial intelligence and Mathematics learning outcomes. One reason is due to the lack of students' ability to visualize questions caused by other internal and external factors, including methods and learning media used by the teacher. Then the results of the study by Diravidamani & Sundarsingh (2010:346-349) state that student involvement in the language acquisition process increases when applying Multiple Intelligences (MI) based teaching methods. The MI theory is a very good tool and allows teachers to build different frameworks to work in the learning process such as generating ideas and training and preparing plans.

The theory that has been proven in previous research also gives the same conclusion in this study that the teacher is a figure who can play a role in developing students' intelligence. Chatib (2012:80) mentions the name of the type of intelligence is not directly related to the value obtained in a particular lesson, but he added that by recognizing the type of intelligence that students have expected the teacher can determine the effective teaching strategy. The research findings of Gani, Safitri and Mahyana (2017) show that students' visual-spatial intelligence can be built by learning that utilizes student work based on multiple intelligence.

Amhar in Harmony and Theis (2012:17) mentions spatial intelligence can be built cognitive, psychomotor, and affective.

Cognitively, spatial intelligence can be built by introducing students to spatial material, for example by sketches, plans, photos, maps, models, and adventure films. Psychomotor, for example, is used to documenting spatial aspects even though it is only a personal note, besides that it can also be in the form of making detailed descriptions of lessons or even equipped with pictures relating to the lesson. Affectively or to build attitudes, students' appreciation of the spatial world can be built by familiarizing students with reading graphics, symbols in flat-drawn images, space, including reading maps.

The next variable that was correlated with the learning outcomes of Social studies in this study was intrapersonal intelligence. Intrapersonal intelligence is a type of intelligence that helps individuals make judgments and differences between their own minds, builds mental models that are appropriate for themselves and relies on that model when making decisions about their own lives, facilitating access to their inner lives, important to know yourself, allows self-awareness, self-understanding, self-motivation and control of behavior, emotions and forms of expression itself (Perez & Ruz, 2014:143).

The relationship between intrapersonal intelligence and learning outcomes of Social studies in this study also shows that there is a positive and significant relationship but in a very low category. The results of this study have similarities with previous research by Anggraini (2016:52) who obtained a low positive correlation coefficient and significant between intrapersonal intelligence and Mathematics learning outcomes. Whereas in economic learning outcomes, Rizal's findings (2016:56) show that there is a strong and significant positive relationship between intrapersonal intelligence and learning outcomes in Economics.

The study by Shearer (2009:58) explains that there is a strong relationship between intrapersonal intelligence and the level of student career clarity. He mentioned that self-knowledge (intrapersonal) is more closely related to career planning than other multiple intelligences, including academic (linguistic and logical-mathematical) abilities. Students with lower intrapersonal values tend to have lower and more flat multiple intelligence profiles than students with greater intrapersonal values. The

challenge in helping these students is to increase awareness and appreciation of the unique strengths they have, regardless of how they are compared to others.

The low relationship between intrapersonal intelligence and learning outcomes of Social studies in this study is possible because respondents have not been able to utilize and maximize intrapersonal intelligence well. For example, they can recognize their feelings and emotions well, make plans, have high learning motivation but still lack confidence, high dependence on others, and have not dared to express their opinions firmly even though the overall sample has intrapersonal intelligence in the category is being Intrapersonal intelligence that is well developed will affect success and achievement motivation. Conversely, if it is not well developed it will hinder its success in learning so the role of the teacher is also needed to be able to recognize intrapersonal learners and help them to be more advanced, especially in improving learning outcomes.

The relationship between visual-spatial intelligence and intrapersonal intelligence with Social studies learning outcomes in this study is in accordance with the opinion of Novarlia (2013:8) which states that Social studies subjects not only aim to develop knowledge but also pay attention to aspects of skills and attitudes so that they also learn how to solve problems related to spatial problems that arise in everyday life.

Based on these opinions, it can be understood that students are required to be able to build visual-spatial and intrapersonal intelligence in order to be able to adjust gradually in accordance with the development of his age in the face of changes in space on the face of the earth. Simply put, they can practice the spatial abilities they have through Social Sciences lessons. Conversely, Social studies learning outcomes show the extent to which they understand and provide solutions to spatial problems that occur daily so that it is expected not only to become knowledge but also to have a good influence on their skills and attitudes when dealing with them in real life.

Likewise with intrapersonal intelligence, intelligence is very important for the growth of students as individuals. This intelligence will give students the ability to understand internal aspects of themselves and apply basic self-

discipline, for example to set schedules and routines, train self-activity, be intelligent in thinking and acting, foster motivation to learn, know self-limitation, develop learning strategies and prepare targets and proper planning so that it gives a good influence on learning outcomes. More than that, intrapersonal intelligence directs someone to recognize the form and understanding of themselves so that they can be utilized properly in achieving success and supporting a better life in the future.

D. CONCLUSION

Based on the results of data processing and discussion it can be concluded that the level of relationship between spatial intelligence and intrapersonal intelligence with learning outcomes of social studies students of Al Azhar Islamic Junior High School Al Azhar Banda Aceh is equal to 0.375 which means there is a low relationship. The effect of being given visual-spatial intelligence and intrapersonal intelligence with social studies learning outcomes is 14.07% and the remaining 85.93% is influenced by other variables outside the research. Hypothesis testing shows $F_{count} > F_{table}$ or 3.85>3.20 so Ha is accepted, which means that there is a significant relationship between visual-spatial intelligence and intrapersonal intelligence with learning outcomes of social studies Students of Al Azhar Islamic Junior High School Banda Aceh, Indonesia. Based on research findings, recommendations that can be given are teachers who are expected to be able to develop and display learning methods that can hone various types of intelligence possessed by students so as to provide an influence on improving learning outcomes.

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