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ANALYSIS OF NATURALIST INTELLIGENCE OF STUDENTS IN CLASS XI IPS OF SANTO LEO HIGH SCHOOL, WEST JAKARTA

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ABSTRACT

This study aims to determine the level of naturalist intelligence of students in class XI of Santo Leo High School, West Jakarta. This research uses descriptive-qualitative method. The population and sample in this study used Simple Random Sampling with students in class XI IPS SMA Santo Leo West Jakarta as many as 32 people. the instrument used in this study is a questionnaire related to naturalist intelligence. The results showed that the naturalist intelligence of students in class XI IPS SMA Santo Leo West Jakarta was classified as a high category with a score of 3.89. As explained in detail the achievement of each indicator is Distinguishing members of a species gets a score of 4.10 with a high category, Recognizing the existence of species with a penchant for being in the open nature of the medium category (3.54), Mapping the relationship between several species, either formally or informally with a score of 4.00 (High category) and Researching natural symptoms with a score of 3.90 which is classified as high.

Keywords: *Environmental Awareness; Naturalistic Intelligence; Student*

INTRODUCTION

The intensity of environmental damage is increasing, resulting in the environment no longer supporting the life of living things. The damage that occurs to the environment is mostly caused by humans (Azmi, 2017). One of the damages that occurs and is caused by humans is the rampant problem of fires in Indonesia caused by the attitude of residents who like to burn when opening new land or cleaning. When the environment is damaged, human activities will be disrupted. For this reason, environmental awareness is needed from each individual, especially students (Gunawan, 2019).

Human interaction with the environment causes changes in the state of nature and the environment, so what needs to be instilled in us is concern for the environment (Pantiwati, 2015). When human attitudes about the environment and the impact of human activities are very neglected and thoughtless, when the

environment is damaged and the ecosystem is destroyed, the balance between life and other life will change, this has a negative impact on every living thing around it. It takes students' environmental care attitude which is influenced by various factors. One of them is the naturalist intelligence that students have. Azzet (2011) states that students' environmental care attitude can be shown by the action of always trying to prevent and repair damage to the natural environment that occurs, as well as preserving it.

Naturalist intelligence is the intelligence to love the beauty of nature through socialization of plants and animals in the surrounding environment and also observing reality and sensitivity or concern for the surrounding environment (Ulfah, 2018). One can be said to have naturalist intelligence, one of which is if he has concern for the surrounding environment and has an attitude to make repairs to natural damage that occurs, preserve, and be able to protect the environment properly (Rahmawati, 2021).

Naturalistic intelligence is one of the types of intelligence in Howard Gardner's Multiple Intelligences theory. Gardner (2013) mentions that there are eight types of intelligence, namely: musical intelligence, kinesthetic intelligence, logical-mathematical intelligence, linguistic intelligence, spatial intelligence, interpersonal intelligence, intrapersonal intelligence and naturalist intelligence.

Naturalistic intelligence is related to the natural environment, which consists of living and non-living things. Naturalistic intelligence is important to be developed as a foundation to foster caring behavior towards the preservation of the surrounding nature. It is known that our earth is currently in a relatively old phase, as a result, if humans are not educated and cultivated regarding caring behavior towards the surrounding environment, it will have a negative impact on human survival on earth. There will be many natural disasters, such as floods and landslides, and the extinction of natural resources that fill the earth (Pramana, 2019).

A person with naturalistic intelligence tends to have a thoughtful behavior towards the environment, either the residential environment or the public environment. A person will maintain the balance of plant and animal life in their natural environment. He will feel angry, sad, concerned if he knows that there are

irresponsible people who disturb plant and animal life in this nature. Caring behavior and sensitivity to the reality of nature and its environment result in a person who has this naturalist intelligence being committed to maintaining and preserving (Sumarsono, 2020).

According to Gardner (2013) people who have high levels of naturalist intelligence are very aware of how to distinguish different plants, animals, mountains, or cloud configurations within their ecological niche. Furthermore, Armstrong (2002) explains that in the real world naturalists appear as people who have proficiency in gardening, keeping plants in the house, cultivating a beautiful garden, or showing a natural concern for plants in other ways. Likewise, someone who has flexibility in dealing with animals. Naturalistic intelligence is an important intelligence to have in this day and age. This is because the natural world around the world is currently under attack from the forces of development, technology and economics, so there is a great need for naturalists to devote themselves to caring for the earth (Armstrong, 2002).

Based on the observations that have been made, during the break time, students bring food into the classroom, it seems that there are still those who litter, but there are still students who pick up the garbage and throw it in the trash provided outside the classroom. At Santo Leo High School, West Jakarta, there is an environmental organization. They hold a clean Friday. There are also students who are very eager to water the plants outside the classroom. Attention to the environment is a characteristic of students who have naturalistic intelligence.

In order to preserve the environment, students need to have good naturalist intelligence. Therefore, it is necessary to study students' naturalist intelligence. This research was conducted with the hope of adding knowledge about naturalist intelligence with which can be used as the basis for developing the values of protecting the environment.

MATERIALS AND METHODS

This research was conducted at Santo Leo High School, West Jakarta. The research conducted is descriptive qualitative research which aims to describe a symptom, event that occurs at the present time. The population in this study were grade XI IPS students of Santo Leo High School as many as 125

students. The sample is determined 25% from population. The sample was taken using the Simple Random Sampling technique, in which each element of the population had the same opportunity to be selected as a sample totaling 32 students.

While the instrument used in this study is a questionnaire related to naturalist intelligence. The questionnaire is an information collection technique that provides several statements to be answered so that it is possible to study the attitudes, beliefs, behaviors and characteristics of several key people in the organization who can be affected by the proposed system or existing system (Sugiyono, 2017).

The naturalist intelligence scale uses a number of statement items consisting of statements. The statements have 5 alternative answers (**Table 1**).

Table 1. Pattern of Alternative Response Options for the Naturalistic Intelligence Scale Model

No.	Alternative response	Code	Score
1	Strongly agree	SS	5
2	Agree	ST	4
3	Undecided	RG	3
4	Disagree	TS	2
5	Strongly disagree	STS	1

Source: Sugiyono, 2007

Furthermore, the Likert scale according to Sugiyono (2007) is used to determine the basis for interpreting the scores obtained from filling out the questionnaire, it is necessary to know the value interval as follows:

P = (Highest value - lowest value) / (Measurement Distance)

P = (5-1)/ 3

P=4/3 = 1,33

Next, the average score on the questionnaire is categorized. Pay attention to **Table 2.**

Table 2. Categorization of Attitudes

No.	Interval	Category
1.	3.67-5.00	High
2.	2.33-3.66	Medium
3.	1-2.32	Low

Source: Sugiyono, 2007

RESULTS AND DISCUSSION

The acquisition of research results regarding the naturalist intelligence of class XI students of Santo Leo High School which is calculated by four indicators including, distinguishing members of a species, recognizing the existence of species with a penchant for being in nature, mapping the relationship between several species, either formally or informally and researching natural symptoms.

Recognize and distinguish various types of rocks, flora and fauna

Knowing and distinguishing various types of rocks, flora and fauna studies about and distinguishes various types of rocks, flora and fauna and has a record of animal phenomena, plants and similar things. For more details **Table 3.**

Table 3. Recognize and distinguish various types of rocks, flora and fauna

indicator	Sub indicator	Question number	Student answer score										Total Score	Avg
			SS	SC	ST	SC	RG	SC	TS	SC	STS	SC		
Distinguishing members of a species	Recognize and distinguish various types of rocks, flora and fauna	1	16	80	8	32	2	6	4	8	2	2	128	4
		2	17	85	5	20	5	15	1	2	4	4	126	3.9
		3	13	65	10	40	6	18	2	4	1	1	128	4
													Average	3.97
	Have records of animal phenomen, plants and similar things	4	25	125	3	12	1	3	1	2	2	2	144	4.5
		5	19	95	7	28	2	6	3	6	1	1	136	4.25
		6	10	50	14	56	5	15	2	4	1	1	126	3.93
													Average	4.22
													Average	**4.10**

Source: Primary Data, 2022

Based on **Table 3**, it can be seen that the sub-indicator of distinguishing members of a species consists of recognizing and distinguishing various types of rocks, flora and fauna getting an average of 3.97 in the high category and having records of animal phenomena, plants and similar things getting an average of 4.22 in the high category. So that the indicator of distinguishing members of a

species gets a score of 4.10 which is classified in the high category.

Recognizing the existence of species with a penchant for the outdoors

Recognizing the existence of species with a penchant for being in nature consists of two aspects: Enjoying outdoor walks, zoos, or natural history museums and enjoying being in gardens, parks, aquariums, or other living systems. Take a look at **Table 4.**

Table 4. Recognizing the existence of species with a penchant for the outdoors

Indicator	Sub indicator	Question number	Student answer score										Total Score	Avg
			SS	SC	ST	SC	RG	SC	TS	SC	STS	SC		
Recognize the presence of species that love the outdoors	Enjoys nature walks, zoos, or natural history museums	7	10	50	5	20	5	15	2	4	10	10	99	3.09
		8	11	55	8	32	6	18	6	12	1	1	118	3.68
		9	15	75	4	16	4	12	5	10	4	4	117	3.65
													Average	3.47
	Enjoys being in gardens, parks, aquarium, or other living systems	10	10	50	2	8	4	12	9	18	7	7	95	2.96
		11	15	75	6	24	7	21	3	6	1	1	127	3.96
		12	13	65	7	28	5	15	6	12	1	1	121	3.78
		13	17	85	3	12	5	15	1	2	6	6	120	3.75
													Average	3.61
													Average	**3.54**

Source: Primary Data, 2022

Based on **Table 4**, it can be seen that the aspect of liking to walk in nature, zoos, or natural history museums gets an average of 3.47 with a moderate category and the aspect of liking to be in gardens, parks, aquariums, or other living systems gets an average of 3.61 with a moderate category. So that the indicator of recognizing the existence of species with a penchant for being in nature is classified as a moderate category (3.54).

Mapping relationships between species, either formally or informally

Mapping relationships between species, either formally or informally, consists of showing affinity for plants and animals, enjoying caring for animals and plants and believing that animals have rights of their own. For clarity, see **Table 5.**

Table 5. Recognizing the existence of species with a penchant for the outdoors

Indicator	Sub indicator	Question number	Student answer score										Total Score	Avg
			SS	SC	ST	SC	RG	SC	TS	SC	STS	SC		
Recognize the presence of species that love the outdoors	Demonstrate connection to plants and animals	14	10	50	10	40	5	15	5	10	2	2	117	3.65
		15	25	125	4	16	1	3	1	2	1	1	147	4.59
		16	11	55	11	44	6	18	2	4	2	2	123	3.84
		17	13	65	12	48	5	15	1	2	1	1	131	4.09
													Average	4,04
	Enjoys taking care of animals and plants	18	14	70	11	44	3	9	1	2	3	3	128	4
		19	16	80	7	28	6	18	2	4	1	1	131	4.09
		20	22	110	7	28	1	3	1	2	1	1	144	4.5
													Average	4.19
	Believes that animals have their own rights	21	12	60	7	28	2	6	6	12	5	5	111	3.46
		22	9	45	15	60	5	15	1	2	2	2	124	3.87
		23	11	55	12	48	7	21	1	2	1	1	127	3.96
													Average	3.77
													Average	**3.54**

Source: Primary Data, 2022

Based on **Table 5**, it can be seen that Showing a connection to plants and animals gets a score of 4.04 with a high category, Happy to care for animals and plants is classified as a high category of 4.19 and Believes that animals have their own rights with a high category (3.77). it can be seen that Mapping relationships between several species, either formally or informally with a score of 4.00 (high category).

Researching natural phenomena

Researching natural phenomena includes the aspects of showing sensitivity to natural forms and having a high interest and good understanding in nature-based topics or projects. For clarity, see **Table 6**.

Table 6. Recognizing the existence of species with a penchant for the outdoors

Indicator	Sub indicator	Question number	Student answer score										Total Score	Avg
			SS	SC	ST	SC	RG	SC	TS	SC	STS	SC		
Researching natural phenomena	Demonstrate sensitivity to natural forms	24	13	65	7	28	4	12	1	2	7	7	114	3.56
		25	15	75	4	16	4	12	2	4	7	7	114	3.56
		26	10	50	11	44	4	12	5	10	2	2	118	3.68
													Average	3.60
	High interest and good understanding in nature-based topics or projects	27	17	85	8	32	4	12	1	2	2	2	133	4.15
		28	19	95	7	28	4	12	1	2	1	1	138	4.31
		29	14	70	11	44	5	15	1	2	1	1	132	4.12
		30	18	90	6	24	4	12	3	6	1	1	133	4.15
													Average	4.19
													Average	3.90

Source: Primary Data, 2022

Based on **Table 6**, it can be seen that the aspect of Showing sensitivity to natural forms obtained a score of 3.60 (medium category) and Having a high interest and good understanding in nature-based topics or projects is classified as a high category with a score of 4.19. so that the indicator Researching natural phenomena obtained a score of 3.90 with a high category.

The naturalist intelligence of students in grade XI of Santo Leo High School, West Jakarta can be seen in **Table 7** below.

Table 7. Naturalistic intelligence of 11th grade students of Santo Leo High School

Indicator	Average score	Category
Distinguishing members of a species	4.10	High
Recognize the existence of species with a penchant for the outdoors	3.54	Medium
Mapping relationships between multiple species, either formally or informally	4.00	High
Researching natural phenomena	3.90	High
Score Average	3.89	High

Source: Primary Data, 2022

Based on the data analysis that has been described, it is known that the results of naturalist intelligence of students in class XI IPS of SMA Santo Leo West Jakarta are classified as high category with an average score of 3.89. This means that

these students already understand and have the ability to understand, recognize and classify objects in nature both living things such as flora and fauna as well as inanimate objects such as rocks and sensitivity to natural phenomena that occur in the environment.

The scoring of research data on naturalist intelligence variables based on the instrument lattice indicators shows that indicator number 1, namely distinguishing members of a species, sub indicator Having a record of animal phenomena, plants and similar things is an indicator of naturalist intelligence with the highest score compared to other indicators. Thus, this indicator is the factor that most influences students' naturalistic intelligence. This proves that students have thought logically about the existence of animals and plants so that they do not become extinct. Humans are responsible for ensuring the survival of animals. As stated by Purwono (2020), someone who has naturalist intelligence is capable of recognizing plants, animals, and other parts of the universe and their abilities to process, document, utilize, and preserve nature.

The indicator of naturalistic intelligence with the lowest score is indicator number 2, which recognizes the existence of species with a penchant for being in nature. This result shows that this indicator is the least influential factor on students' naturalistic intelligence. Currently, most students prefer to play gadgets, watch movies on the internet, and use social media rather than watch videos about flora and fauna. This is in accordance with the opinion of Pramana (2019), who states that naturalist intelligence is important to have in this day and age because if a child grows up in an urban environment and does not know about the natural world of living things, then he will transfer the natural components to objects in the city. Currently, nature around the world is under attack from the forces of development, technology, and economics, so there is a great need for naturalists to care for and care for the environment. Starting from the school environment, students from an early age must be taught to care for the surrounding environment, which will shape their character.

By knowing the score of the lowest indicator of students' naturalistic intelligence, namely recognizing the existence of species with a penchant for being in nature, teachers can invite students to carry out activities to care for

plants at school, such as watering and weeding plants and other outdoor activities. The efforts made are expected to develop naturalist intelligence in students, so that when they grow up they become humans who continue to strive to preserve the environment.

CONCLUSIONS

Based on the results and discussion of this study, it can be concluded that the naturalist intelligence of class XI IPS students of SMA Santo Leo West Jakarta is high (3.89). with the highest score on the indicator of distinguishing members of a species and the lowest score on the indicator of recognizing the existence of species with a penchant for being in the open.

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