



Naturalistic Intelligence and Environmental Sustainability (A Review)

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Abstract

This paper examines the relationship between naturalistic intelligence and environmental love and techniques for developing naturalistic intelligence to foster a love for the environment as a manifestation of green education. This paper is literature research. Environmental degradation has become a global issue that continues to capture the world's attention in search of solutions. The environment was created by the Creator to fulfill human needs, and humans have utilized it. Therefore, environmental degradation is undoubtedly linked to human responsibility in how they treat the environment. Hence, one of the solutions to address is the development of naturalistic intelligence to foster a love for the environment. This solution is considered a long-term one, as naturalistic intelligence is integrated into human life and persists throughout human existence. Based on the results of the study, the development of naturalist intelligence among students needs to be optimized. Schools has been the responsibility to development naturalist intelligence from an early age.

Keywords: Environmental love, naturalistic intelligence, green education

1. INTRODUCTION

The issue of environmental degradation has become a global concern that continues to capture the world's attention in the search for solutions. The natural environment was created by the Creator to fulfill human needs, and humans have been continuously utilizing it. Therefore, environmental degradation undoubtedly stems from human responsibility to use the environment to meet people's needs. As expressed by Nizaar [1], from an anthropocentric perspective, where the environment is seen as existing to fulfill all human life needs, the damage that occurs is caused by human behavior that is not aligned with environmental sustainability. Human behavior should be in line with environmental sustainability, recognizing that the environment serves not only for the present generation but also for future generations.

Upon closer examination, to examine solutions to environmental degradation it cannot be separated from the issue of human responsibility in treating the environment. Therefore, appropriate efforts should begin with each individual by developing naturalistic intelligence. This solution becomes long-term because naturalistic intelligence is integrated into human life and remains throughout human existence.

Naturalistic intelligence is the ability to positively interact with the natural environment, treating nature as a vital part of life that must be preserved. Individuals with high naturalistic intelligence will possess a strong instinct manifested in various behaviors that can sustain environmental preservation. They will continuously have a sense of belonging to the environment, making it akin to how they treat themselves. The research by Ningrum [2] found a significant positive correlation between naturalistic intelligence and environmental awareness, with a correlation coefficient value of 0,754. This suggest that students with higher naturalistic intelligence tend to have greater environmental awareness. The study highlight that students who have an interest in flora and fauna, understand environmental issues, enjoy outdoor activities, have scientific hobbies, and concerned about environmental changes are more likely to exhibit pro-environmental behavior.

2. METHOD

This article is library research. The study of this discussion topic was carried out deductively, inductively, and deductively-inductively. Deductively, namely by conducting a general study of theories about natural intelligence and environmental sustainability, then making specific conclusions. Inductively means carrying out a specific study of the theory and then making general conclusions.

3. RESULT AND DISCUSSION

3.1 Naturalistic Intelligence

Naturalistic intelligence is one of the nine types of intelligence proposed by Gardner. Gardner [3] defines naturalistic intelligence as the ability to understand nature and use the gifts of nature for one's own development. Students with high levels of naturalistic intelligence do well as agriculturists, farmers, landscapers, etc. It is possible in an educational institution to develop the above eight types of intelligence.

Carvin (as cited in Yaumi, 2012:199 [4]) defines naturalistic intelligence as "the ability of an individual to identify and classify patterns in nature." Additionally, Bowles (as cited in Yaumi, 2012:23 [4]) states that "the core components of naturalistic

intelligence are sensitivity to nature (flora, fauna, cloud formations, mountains), the skill to differentiate members of a species, recognize the existence of other species, and map relationships between various species both formally and informally. Preserving nature and even becoming part of it, such as visiting places inhabited by many animals and understanding the relationship between environment and nature, represents a high level of intelligence since not everyone can do this easily."

According to Suryadi (2006:53) [5], "naturalistic intelligence is the skill to recognize and explore species (flora and fauna) in the surrounding environment, identify the existence of species, and map relationships between various species. Suryadi also explains that this intelligence includes sensitivity to phenomena among different species and sensitivity to other natural phenomena." Based on the opinions of experts, it can be concluded that naturalistic intelligence is the ability related to an individual's sensitivity to the environment and capability to recognize and categorize species (flora and fauna).

Individuals with naturalistic intelligence can be identified by their behaviors in daily life. There are several traits or characteristics of individuals with naturalistic intelligence. According to Shearer [6], characteristics of naturalistic intelligence include understanding the lives of animals and plants. Connel (as cited in Yaumi, 2012:199-200 [4]) describes that "naturalistic individuals can be characterized as those who: (1) have a deep interest in the environment, (2) engage with nature, (3) protect nature from pollution, (4) navigate nature easily, (5) easily see patterns in nature, (6) recognize various types of rocks, flora, and fauna, even different types of birds that live in that environment, (7) bring nature into the classroom if they are a teacher." Suryadi (2006:54) [5] presents characteristics of children with naturalistic intelligence can be seen from the way they show affection for animals, their desire to have pets, their enjoyment in observing birds and plants, their ability to appreciate objects and stories related to natural phenomena, their enjoyment in observing what happens in the environment, and so forth. Similar views are presented by Yaumi (2012:201-202) [4], who outlines the characteristics of individuals with naturalistic intelligence as follows: (1) frequently discussing animals, plants, or natural conditions, (2) enjoying nature trips to parks, zoos, or museums, (3) having sensitivity to nature (such as rain, storms, lightning, mountains, soil, etc.), (4) enjoying watering plants or caring for flora and fauna, (5) liking to visit animal enclosures, aviaries, or aquariums, (6) enjoying learning about ecology, nature, animals, and plants, (7) frequently discussing animal rights and the workings of the planet Earth, (8) enjoying nature-based projects (observing birds, butterflies, or other insects, cultivating plants, and caring for animals), (9) liking to bring small animals, flowers, leaves to school, then sharing experiences with teachers and classmates, (10) performing well in topics involving animal life systems, natural processes, and human biology.

Characteristics of children with naturalistic intelligence are as follows: (1) Feels at their best in the outdoors, (2) Strives for balance with nature and mind and body, (3) Demonstrates an empathy with nature and its creatures, (4) Has a strong sense of responsibility towards the environment, (5) Possesses a sensitivity to animal abuse and environmental destruction, (6) Enjoys exploration, adventure, open-ended experiences, dan (7) Feels an affinity toward animals in general, pets in particular [7]. One prominent trait among children strong in naturalistic intelligence is their enjoyment of nature and animals, such as being bold in approaching, touching, petting, and even instinctively caring for them [8].

Based on the various opinions, it can be concluded that individuals with naturalistic intelligence exhibit characteristics such as frequently discussing animals, plants, and natural conditions, having sensitivity to nature (such as clouds, rain, and storms), owning pets, showing affection for animals, enjoying caring for and watering plants, and delighting in nature trips to parks, zoos, and museums.

3.2 Environmental Love, Environmental Sustainability, and Naturalistic Intelligence

Love relates to emotions or feelings, specifically positive feelings. Love is a strong emotion based on personal attraction. In a philosophical context, love is a virtuous trait encompassing all goodness, compassion, and affection. Love is an active action performed by humans towards other objects, involving self-sacrifice, empathy, attention, affection, helping, obeying, following, compliance, and willingness to do anything desired by the particular object (id.wikipedia.org, accessed May 3, 2024). Sternberg [9] adds the element of commitment as a component of perfect love, in addition to passion and intimacy (<https://www.verywellmind.com>, accessed May 3, 2024).

Considering the notion of love, environmental love can be interpreted as the active actions performed by humans towards the environment, including self-sacrifice, empathy, attention, affection, commitment, and the willingness to do anything for the benefit of environmental sustainability. Environmental love means protecting the environment from damage, nurturing it, and treating it as an integral part of life. It involves maintaining the natural balance of the environment to remain sustainable over time. Therefore, it can be said that environmental love will lead to environmental sustainability. The relationship between naturalistic intelligence, environmental love, and environmental sustainability can be illustrated as follows:



Figure 1. Naturalistic Intelligence, Environmental Love and Environmental Sustainability

Attributed to naturalistic intelligence, it can be assumed that individuals with high naturalistic intelligence will also have a strong love for the environment. Therefore, the development of naturalistic intelligence is essential for maintaining environmental sustainability over time. Anna's [10] research findings show that naturalistic intelligence contributes 24.8% to environmental care attitudes. Wirdianti [11] research concluded that there is a relationship between naturalistic intelligence and environmental responsibility. Similarly, Afifah [12] found that naturalistic intelligence influences students' pro-environmental behavior. Rahmawati [13] also found a relationship between naturalistic intelligence and attitudes toward caring for the surrounding environment, with a determination coefficient of 16.3%.

3.3. Development of Naturalistic Intelligence

Naturalistic intelligence can be developed through formal, non-formal, or informal education. Formal education involves the development of naturalistic intelligence through school education. Non-formal education encompasses the development of naturalistic intelligence through activities in study groups, community organizations, environmental clubs, and other similar activities. Informal education occurs within the family environment through habituation and modeling by parents and other adults. Specifically, in formal education, Adnyana [14] posits that green education at the elementary level introduces basic environmental concepts, while secondary education delves deeper into environmental issues and emphasizes critical thinking. Higher education offers specialized programs and courses in environmental studies, sustainability science, and green technology, equipping students with the necessary expertise to address global environmental challenges.

Several research studies have demonstrated the use of specific methods to develop naturalistic intelligence. In an experimental study, Thalib [8] used the written group guidance technique to enhance the naturalistic intelligence of elementary school students. The results concluded that the written group guidance technique can increase the naturalistic intelligence of elementary school students. Dwikayani's [15] research showed that gardening activities can improve children's naturalistic intelligence. These research findings imply that written and gardening techniques can effectively enhance social intelligence, particularly for elementary and kindergarten children. Murtafiah [16] study found that naturalistic intelligence in early childhood can be improved through the method of science fiction storytelling.

The methods/techniques for developing naturalistic intelligence are not limited to those three methods; many others are still in use. Particularly in school guidance and counseling services, methods/techniques that can be employed include fantasy methods, field trips, cinema, reading, music/songs, and crossword puzzles.

4. CONCLUSION

The development of naturalistic intelligence can serve as a long-term solution to address current and future environmental issues. Therefore, efforts to foster naturalistic development should be pursued continuously and holistically through formal, non-formal, and informal education. Various methods and techniques can be employed to develop naturalistic intelligence. Schools has been the responsibility to development naturalist intelligence from an early age.

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