INTERPRETING GEOPARK CONCEPTS IN THE CURRICULUM: PREPARING YOUNG GENERATION FOR CONSERVATION AND SUSTAINABILITY

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Abstract

This research aims to examine the process of integrating the Geopark concept into the curriculum at SD Inpres Mannurukki and its impact on students' understanding and awareness of conservation and sustainability. A qualitative approach with a case study design was used to obtain in-depth understanding through interviews, observations and document analysis. The research results show that the Geopark concept has been successfully integrated through a thematic approach in subjects such as Natural Sciences (IPA), Social Sciences (IPS), and Environmental Education (PLH). This integration enriches students' learning with direct experience and increases their environmental care attitudes, reflected in students' initiatives in maintaining cleanliness and participation in environmental activities. However, there are several challenges, such as limited resources for teaching materials and the need for teacher training in Geopark-based teaching. Support from the government and collaboration with the conservation community are important recommendations to overcome this obstacle. Overall, the integration of the Geopark concept in the curriculum has proven effective in building environmental awareness in elementary school students and has the potential to produce a generation that has an understanding and concern for natural sustainability.

Keywords: *Geopark, Sustainable Education, Curriculum, Young Generation.*

A. INTRODUCTION

Understanding the importance of conservation and sustainability of nature is increasingly becoming a major concern in this modern era. One of the prominent concepts in this effort is Geopark, an area that focuses not only on geological conservation but also on empowering local communities and environmental education (Rohimat et al., 2022). Geopark combines aspects of conservation, education, and tourism, so that it can be an effective learning tool to increase awareness of the younger generation about the importance of preserving nature.

Geopark is a concept of sustainable regional development management that harmonizes (three) natural diversities, namely geological diversity (geodiversity), biodiversity (biodiversity), and cultural diversity (cultural diversity), with the aim of developing and developing a people's economy based on the principle of protection (conservation) of the three diversities (Indrayati et al., 2021). Geopark is the newest concept since it was launched by UNESCO in 2001. Geopark is the best concept to date because it is able to integrate all natural resources around a location that has

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unique geology with the aim of protecting it and improving the welfare of the local community (Sumedi & Pravitasari, 2023).

In geoparks, there is a status hierarchy, starting from Local Geopark (district/provincial level), National Geopark to International/Global Geopark (UNESCO Global Geopark). At the international level, UNESCO urges national geoparks in the world to become members of a network called the Global Geoparks Network (GGN), with the main task of promoting earth heritage areas and local communities in a country that has conservation, research, and development value (scientific, economic) in a sustainable manner so that it is known internationally (Nurhikmah, Indo Santalia, 2023). The determination itself is through an assessment by the UNESCO Geopark Commission by completing documents (dossiers) according to UNESCO guidelines. Global Geopark is an area that promotes geological diversity through community-led initiatives to enhance sustainable development (Kistiyah et al., 2021). This area raises awareness of geological hazards and helps local communities prepare disaster mitigation strategies. Global Geopark has been part of the 4.6 billion-year history of the planet Earth with its geological diversity that has shaped every aspect of people's lives (Setyadi, 2012). However, the Geopark concept is still rarely integrated systematically into the education curriculum, especially at the elementary school level. In fact, elementary education is the main foundation in forming children's understanding and positive habits towards the environment. By instilling Geopark concepts from an early age, children can learn about geological diversity, biodiversity, culture, and the importance of comprehensive nature conservation efforts.

SD Inpres Mannurukki has the potential to be a pioneer in integrating the Geopark concept into the curriculum, thus preparing students with in-depth knowledge and awareness of conservation and sustainability. Through this integration, it is hoped that students will not only understand the values of nature conservation, but also be actively involved in protecting the environment and applying sustainability principles in their daily lives. This article will examine how the Geopark concept can be integrated into the curriculum at SD Inpres Mannurukki, as well as analyze the challenges and potentials that arise in implementing this approach. In addition, this article also aims to provide an overview of the long-term benefits of a Geopark-based education approach in producing a generation that cares about the environment and has a sustainable perspective.

B. RESEARCH METHOD

This research uses a qualitative approach with a case study design to explore in depth the process of integrating the Geopark concept into the curriculum at SD Inpres Mannurukki. This approach was chosen to gain a holistic understanding of the development process, implementation and impact of Geopark-based learning in building conservation and sustainability awareness in elementary school students. The research location at SD Inpres Mannurukki was chosen as the research subject because this school shows potential in integrating environmental concepts, especially Geoparks, into learning activities. The subjects in this research involved teachers, students and the principal of SD Inpres Mannurukki. A total of 3 teachers involved in teaching the Geopark concept became the main source of information in understanding integration methods and the obstacles faced. 10 Students were selected to understand the impact of Geopark-based learning on their understanding of conservation and sustainability. Data was collected using the following techniques: 1) Semi-interview, interviews were conducted with participating teachers, school principals and students to obtain information about experiences, obstacles and the impact of

implementing the Geopark concept in learning. 2) Class Observations, observations are carried out during learning activities to see how the Geopark concept is integrated into the subject and how students respond to the material provided. 3) Documentation, documentation in the form of a syllabus, Learning Implementation Plan (RPP), and teaching materials are collected to analyze how the Geopark concept is formally implemented in the curriculum.

The data obtained were analyzed using thematic analysis techniques. This analysis involves identifying, analyzing, and interpreting themes that emerge from the results of interviews, observations, and documentation. The first stage is to read all the data obtained, then identify themes related to the integration of the Geopark concept, the difficulties faced, and the impact on students. Furthermore, these themes are categorized and arranged to provide a clear picture of the research findings. To ensure the validity and reliability of the data, this study uses triangulation of sources and methods. Triangulation of sources is done by comparing the results of interviews, observations, and documentation, while triangulation of methods is applied by using various complementary data collection techniques. Through this methodology, the study is expected to provide a comprehensive picture of efforts to integrate the Geopark concept into the elementary school curriculum and its impact on the formation of conservation awareness in students.

C. FINDINGS AND DISCUSSION

This study reveals several important findings related to the integration of the Geopark concept into the curriculum at SD Inpres Mannurukki, especially regarding the implementation process, challenges, and impacts on students' understanding and awareness of conservation.

1. Geopark Concept Integration Process in the Curriculum

Based on the results of interviews and observations, the integration of the Geopark concept is carried out through several subjects, especially Natural Sciences (IPA), Social Sciences (IPS), and Environmental Education (PLH). Teachers link topics such as ecosystems, biodiversity, and local culture with Geopark elements, such as geological and ecological characteristics in the local area. In addition, in several activities, teachers use a thematic approach that combines theoretical learning with exploration activities in the school environment. This integration allows students to understand the material contextually and comprehensively, where they not only gain theoretical knowledge but also direct experience. This approach is in line with the principle of contextual learning, which seeks to connect subject matter with real situations that students can experience, so as to increase the relevance and understanding of the concept of sustainability.

The process of integrating the Geopark concept into the curriculum at SD Inpres Mannurukki involves material development, interactive learning implementation, and continuous evaluation. With this approach, it is hoped that students can understand and appreciate the importance of environmental conservation and develop an attitude that cares about the sustainability of nature. Geopark integration not only enriches the curriculum, but also equips the younger generation with knowledge and awareness that is important for the future.

2. Impact on Student Awareness of Conservation and Sustainability

(Revanza et al., 2024) stated that, Indonesian nature elementary schools implement a curriculum based on nature and environmental learning, with a focus on sustainability and conservation. They integrate learning materials related to Geoparks and local ecosystems into daily learning activities, including visits to national parks, gardening practices, and environmental projects. Through direct experience in the field, students at Indonesian nature elementary schools show increased knowledge of ecosystems and the processes that affect the environment. For

example, students learn about the water cycle, the process of photosynthesis, and the importance of biodiversity. The survey results showed that more than 85% of students felt they understood basic environmental concepts better after participating in the learning activities (Ika et al., 2024). From the example in the Indonesian nature elementary school, it can be concluded that the integration of environmental education and the Geopark concept contributes significantly to increasing students' awareness of conservation and sustainability. With better knowledge, positive attitudes, active participation, and global awareness, students not only become more aware of their environment, but are also ready to take action in maintaining the sustainability of nature for future generations.

The results of interviews with students showed that they better understood the importance of protecting the environment after participating in Geopark-based learning activities. Several students mentioned that they felt more responsible for maintaining the cleanliness of the school environment and avoiding destructive behavior, such as littering. Observations also showed an increase in student initiatives to engage in environmental care activities, such as planting trees and cleaning the environment. These findings indicate that Geopark-based learning is effective in increasing students' awareness and positive attitudes towards the environment. This approach shapes students to be more emotionally and cognitively involved, which ultimately encourages more sustainable changes in attitudes and behavior. This increase in student awareness supports the theory of Environmental Education, where environmental education does not only focus on delivering knowledge but also on forming attitudes and behaviors that care about the environment.

3. Challenges in Implementing Geopark-Based Learning

The implementation of Geopark-based learning at SD Inpres Mannurukki aims to equip students with the knowledge and awareness needed to maintain the sustainability of nature. With an interactive approach, field experience, and community involvement, students are expected to be able to understand and appreciate their environment in more depth. This learning does not only focus on academic aspects but also forms attitudes and behaviors that care about the environment that will have a positive impact on the future.

Although there are many benefits, this study also found several challenges faced in integrating the Geopark concept at SD Inpres Mannurukki. The main challenges are limited resources, such as teaching materials that are specific to Geopark, and the lack of training for teachers in Geopark learning methods. Several teachers stated the need for more guidance or special training in order to develop learning materials that are in accordance with the Geopark concept. These limitations indicate that support from the government and related educational institutions is very important to facilitate the implementation of the Geopark concept in the curriculum. The provision of relevant teaching materials and training to improve teacher capacity in delivering environmental-based materials is crucial. As a recommendation, cooperation with local Geopark managers or conservation institutions can also be a solution to provide the resources needed in this learning.

4. Improving School Collaboration with the External Environment

Increasing collaboration between schools and the external environment is essential in strengthening Geopark-based learning and environmental education (Basuki et al., 2019). This collaboration involves not only relationships with local communities but also with various stakeholders, including non-governmental organizations, government agencies, universities, and the private sector. Here are some strategies and benefits of increasing this collaboration: 1) Environmental organizations, collaborating with non-governmental organizations that focus on

conservation and sustainability to organize joint programs that can involve students, such as environmental campaigns or training on natural resource management (Nurul Hidayat, 2024). 2) Awareness activities, involving students in environmental awareness campaigns that involve the community, such as fundraising for environmental projects or counseling on the importance of conservation (Nurhikmah, 2021). These activities can strengthen the relationship between schools and communities and build collective awareness. 3) Social media and communication, using social media platforms to disseminate information about school activities and their impact on the environment (Kadarisman, 2019). This can increase community involvement and draw wider attention to environmental issues.

Increasing school collaboration with the external environment is a strategic step that can enrich Geopark-based learning and increase students' awareness of environmental issues (Sarah Andriany et al., 2016). Through collaboration with various parties, students not only gain broader knowledge and experience but also have the opportunity to be directly involved in activities that have a positive impact on the environment. This collaboration will form a young generation who not only understand the importance of conservation, but also actively contribute to maintaining the sustainability of nature. This study found collaborative efforts between SD Inpres Mannurukki and external parties, such as environmental care communities and conservation organizations. Activities such as field visits to conservation areas or national parks are part of this Geopark-based learning. Students get the opportunity to see natural phenomena firsthand and learn about the importance of maintaining biodiversity. This collaboration provides great added value in learning, because it can improve students' understanding through direct experience in the field. The collaborative approach with the local community also supports the concept of Community-Based Learning, where the learning process does not only occur in the classroom but also through interaction with the real environment which can increase the effectiveness of environmental education.

D. CONCLUSION

The integration of the Geopark concept into the curriculum at SD Inpres Mannurukki has a positive impact on the formation of understanding and awareness of environmental conservation in students. The Geopark-based learning process implemented through a thematic approach and collaboration with external parties allows students to learn the concept of sustainability contextually and practically. Students not only understand the important value of preserving nature, but also begin to show changes in attitudes and behavior that are more concerned about the environment, such as taking the initiative to maintain cleanliness and being involved in environmental care activities. Although this learning is effective, there are challenges in the form of limited resources and the need for special training for teachers. Support from the government, provision of appropriate teaching materials, and collaboration with conservation communities are expected to help overcome these obstacles, so that the integration of the Geopark concept can run more optimally. Overall, the integration of the Geopark concept in elementary schools is a strategy that has great potential in forming a young generation that is environmentally aware and has a high awareness of the sustainability of nature. The application of this method is expected to be improved and developed further to support effective environmental education at the elementary school level.

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