OPTIMIZING GEOSPATIAL LITERACY: A QUALITATIVE EXPLORATION OF GOOGLE EARTH AS AN EFFECTIVE LEARNING TOOL IN PRIMARY EDUCATION

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The utilization of information technology in the field of education, particularly Google Earth, has become a significant breakthrough. This article examines the potential of Google Earth as a map learning tool at SDN Sidomulyo 02. The research focuses on students and teachers from grades 4-6, employing a qualitative approach with a case study. The research results indicate an improvement in student engagement, a better understanding of map concepts, and increased learning motivation. Google Earth provides a dynamic, visual, and interactive experience, allowing students to explore the world virtually. This advantage is evident in the identification of map symbols, understanding legends, and interpreting geographical information. A comparison with conventional methods emphasizes the superiority of Google Earth in the context of map learning, supporting a contextual learning approach. Despite the positive outcomes, challenges in implementation involve a learning curve for teachers. Therefore, advanced training and technical support are key to the effectiveness of Google Earth usage. This article contributes to a deeper understanding of the positive impact of Google Earth on students' geospatial literacy. Its implications include recommendations for teachers and policymakers to integrate learning technologies, especially Google Earth, into elementary education curricula. As a significant contribution, this research paves the way for the broader use of similar technologies in elementary education and serves as a foundation for further research in the development of learning methods that integrate technology.

1. INTRODUCTION

The utilization of information technology in the field of education has undergone significant development in recent years. One technological breakthrough with immense potential for enhancing the quality of learning is Google Earth (Putri, P. H., et al., 2022). Google Earth is a virtual mapping application that enables users to explore various locations worldwide through satellite imagery, maps, and 3D models. According to Islami, N. (2017), it is a highly beneficial application for the study of earth sciences, geography, and even in the realm of social sciences. The strength of this technology lies in its ability to provide an engaging visual and interactive experience, making it a potential learning medium, especially in map learning at the elementary school level (Amelia et al., 2023).

The importance of map understanding among elementary school (SD) students is an aspect that cannot be ignored. Learning maps through Google Earth goes beyond knowing the geographical location of a place; it involves the interpretation of symbols, legends, and other geographical information (Putra, A. A., 2016). Therefore, teaching methods are needed to make these concepts more easily understood by students. By designing learning activities that incorporate such technologies in real-world contexts, educators can promote the development of students’ knowledge and skills related to geography, especially in map learning (Huang, K. H., 2018).

Google Earth, as a learning tool, is expected to provide an efficient learning process. This tool is part of the learning resources that function as a support tool for teaching activities, aiding in effectively conveying objectives or messages (Alfiyiana et al., 2022). The superiority of Google Earth lies in its more realistic and interactive visual experience compared to conventional methods (Putra et
al., 2019). It is hoped that this advantage can stimulate interest and enhance students' understanding of map learning materials, especially at SDN Sidomulyo 02.

Currently, the use of maps in SD learning is crucial for developing students' geospatial understanding. This understanding includes not only knowledge of a place's location but also interpretative skills related to spatial information found in maps, such as symbols and legends (Sukron, M. A., et al., 2019). Therefore, in-depth research is needed regarding teaching methods that can facilitate students' understanding of these concepts.

Previous studies have shown that the use of technology in learning can have a positive impact on student learning outcomes. Furthermore, according to Febrianti et al. (2023), the use of Google Earth as a media tool can be utilized to increase student interest and learning outcomes. Therefore, this research aims to investigate the potential use of Google Earth as a map learning tool at SDN Sidomulyo 02. This study adopts a qualitative approach, which according to Yusanto, Y. (2020), aims to gain a deep understanding of a phenomenon, facts, or reality. Thus, this research is directed towards obtaining a profound understanding of students' experiences in using Google Earth as a learning medium.

By involving SDN Sidomulyo 02 as the research locus, this study is expected to provide a concrete and contextual overview of the use of technology in the map learning process at the elementary school level. The choice of a qualitative approach as a research methodology is expected to provide a deeper and nuanced understanding of the impact of using Google Earth in elementary schools. Additionally, the results of this research are expected to offer practical recommendations for teachers and policymakers in integrating learning technologies, especially Google Earth, into the curriculum at SDN Sidomulyo 02.

Through the contribution of this research, it is hoped that a foundation will be formed for the development of students' geospatial literacy at the elementary school level, where an understanding of geospatial concepts is crucial knowledge required by individuals in the context of understanding space and location (Pratiwi, U. et al., 2020). By understanding the potential of Google Earth as a map learning tool, it is hoped to open doors for the broader utilization of similar technologies in elementary education. Moreover, it is also anticipated to provide a foundation for further research in the development of learning methods that integrate technology at the elementary education level.

2. METHOD

This research adopts a qualitative approach, which comprehensively and contextually describes phenomena by collecting data from the natural environment and utilizing the researcher as the main instrument (Fadli, M. R., 2021). This approach is chosen to provide a deep understanding of students' experiences in using Google Earth as a map learning tool at SDN Sidomulyo 02. The choice of a qualitative approach is considered because it allows for exploring the meaning, perceptions, and impacts of technology use in the context of map learning in elementary schools.

This study employs a case study design to holistically understand the implementation of Google Earth at SDN Sidomulyo 02. According to Hidayat, T. et al. (2019), in case study data collection, researchers can utilize various techniques such as interviews, observations, and documentation, enabling them to investigate specific and in-depth contexts, explore the experiences of students and teachers, and understand its impact on map learning.

The research sample is purposively chosen, a sampling method based on the researcher's evaluation of individuals who meet the criteria for inclusion as samples (Zakariah, M. A. et al., 2020), involving students and teachers from grades 4-6 at SDN Sidomulyo 02 actively engaged in using Google Earth. This selection aims to encompass variations in experiences and perceptions related to this learning tool.
Data Collection Instruments

Observation involves all senses, including hearing, sight, touch, and taste, based on empirical event facts (Hasanah, H., 2017). In this case, the researcher will directly observe the learning process in classes using Google Earth. This observation will cover student interactions with technology, teaching strategies employed by teachers, and student responses to visual and interactive learning.

In-depth interviews are conducted with participating teachers and students. This data collection activity involves direct interaction between the researcher and research subjects (Jailani, M. S., 2023). Interview questions are designed to explore their understanding of the effectiveness of Google Earth as a map learning tool, challenges faced, and perceived benefits.

Document analysis serves as a data source that can support information from observations and interviews (Fadli, M. R., 2021). Document analysis involves reviewing learning records, student responses, and teaching materials related to the use of Google Earth. The aim is to gain a more comprehensive understanding of the impact of this technology in the context of map learning.

Data Analysis

Qualitative data will be analyzed using a thematic approach. The goal is to organize several themes into a set of data (Kristanto, Y. D. et al., 2020). Findings from observations, interviews, and document analysis will be grouped into main themes reflecting the impact of using Google Earth in map learning.

3. RESULTS AND DISCUSSION

Results

One of the main findings from observations is the increased engagement of students during learning using Google Earth. In several sessions, it was evident that students were more active and enthusiastic when utilizing this technology. They engaged in interactions with virtual maps, explored geographic details more effectively, and demonstrated a high level of interest in the subject matter. These observations reflect that Google Earth provides interactive elements that enhance student engagement in map learning.

Interview results with students support this finding. Most students stated that the use of Google Earth made learning more interesting, and they felt more involved in the learning process. One student mentioned, "Usually, maps in books feel boring, but with Google Earth, we can see those places directly. So, learning becomes more exciting."

Document analysis, including student responses and learning notes, indicates an improvement in students' understanding of map concepts. Teachers reported that students were better at identifying map symbols, understanding legends, and interpreting geographical information. Additionally, observation results showed that students were able to relate map knowledge to real-world situations more effectively after using Google Earth.

In-depth interviews with teachers reinforce this finding. Teachers noted that the visualization provided by Google Earth helps students understand map concepts more easily, which might be challenging to explain using conventional methods alone. A teacher expressed, "Students can recognize geographical patterns better because now they can 'see' them directly through Google Earth."

This research also highlights an increase in students' learning motivation. During observations, it was observed that students were more motivated to participate in class discussions and perform map-related tasks when using Google Earth. Students showed higher enthusiasm and a desire to explore more about geographical locations. Interviews with students confirm this finding. Some students stated that the use of Google Earth adds an element of excitement and additional curiosity to the learning process. One student revealed, "I became more curious about the world around me. After using Google Earth, I like to find out more about places I've never heard of before."
Discussion
A comparison between the use of Google Earth and conventional methods demonstrates the superiority in providing a more dynamic learning experience (Fitrotiha, T. A. I., et al., 2023). In conventional methods, students are limited to printed map images in books, while Google Earth provides the ability to virtually explore the world. This creates a more realistic and profound experience for students, helping them overcome understanding barriers that may arise in conventional learning.

These findings align with literature stating that the use of technology with Google Earth as a medium can enhance students’ interpretative abilities regarding spatial information (Faudah, C. M., et al., 2023 & Santoso, A., et al., 2022). Through the visual experience provided by Google Earth, students can more easily connect map theory with phenomena in the real world. Thus, it can be concluded that Google Earth contributes positively to students’ geospatial literacy.

Quoting from Ashari, R. N. (2023), the use of Google Earth also supports a contextual learning approach, where students can understand map concepts in the context of real-life situations. Visualizing the real world through this technology allows students to associate geographical information with their personal experiences. This aligns with the theory that learning related to students' everyday life contexts can enhance retention and understanding of subject matter.

Although the research results indicate positive impacts, some challenges in implementing Google Earth also need attention. Teachers reported a learning curve in using this technology, especially for those unfamiliar with the tool. Therefore, ongoing training and technical support may be necessary to ensure the effectiveness of using Google Earth in various educational contexts.

4. CONCLUSIONS
The utilization of Google Earth in map learning at the elementary school SDN Sidomulyo 02 demonstrates significant potential to enhance the quality of students' geospatial education. Key findings include increased student engagement, a better understanding of map concepts, and improved learning motivation. Google Earth provides a dynamic and realistic learning experience, enabling students to explore the world virtually. The research results indicate that the use of Google Earth assists students in identifying map symbols, understanding legends, and interpreting geographical information more effectively. A comparison with conventional methods highlights the superiority of Google Earth in providing a more realistic and interactive visual experience. In the context of map learning, this technology helps students connect map theory with real-world situations, supporting a contextual learning approach. Despite the positive outcomes, challenges in implementing Google Earth need attention, especially regarding the learning curve for teachers unfamiliar with the tool. Ongoing training and technical support are identified as crucial factors to ensure the effectiveness of using Google Earth in various educational contexts.

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