Pediaqu : Jurnal Pendidikan Sosial dan Humaniora
https://publisherqu.com/index.php/pediaqu
Vol. 4, No. 3 Juli 2025
P-ISSN:2964-7142; E-ISSN:2964-6499

EFFECTIVENESS OF USING ONLINE RESOURCES AND OPEN EDUCATIONAL RESOURCES (OER) KHAN ACADEMY IN IMPROVING GEOGRAPHICAL KNOWLEDGE OF SOCIAL STUDIES EDUCATION STUDENTS

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Abstract

This study investigates the degree to which Khan Academy serves as a digital geography learning platform. Students' opinions on accessibility, content relevance, concept understanding, learning independence, and overall efficacy as an Open Learning Resource (OER) were to be evaluated. Students were given questionnaires as part of this quantitative study, which received a positive response with an average overall score of 3.98. The findings show that Khan Academy improves students' comprehension, promotes self-directed learning, and provides flexible access to educational resources. These results are consistent with earlier studies that highlight how educational technology can enhance student engagement and cognitive performance. But it also emphasizes how crucial teacher involvement is in assisting students' character development and guiding them. The findings indicate that integrating digital platforms such as Khan Academy in geography education can significantly support learning when combined with active participation from teachers.
Keywords: Digital Learning,Geoghraphy Education, Social Studies Education, Khan Academy, Open Educational Resources

Abstrak

Studi ini menyelidiki sejauh mana Khan Academy berfungsi sebagai platform pembelajaran geografi digital. Pendapat siswa tentang aksesibilitas, relevansi konten, pemahaman konsep, kemandirian belajar, dan kemanjuran keseluruhan sebagai Sumber Belajar Terbuka (OER) harus dievaluasi. Siswa diberi kuesioner sebagai bagian dari studi kuantitatif ini, yang menerima respons positif dengan skor keseluruhan rata-rata 3,98. Temuan menunjukkan bahwa Khan Academy meningkatkan pemahaman siswa, mempromosikan pembelajaran mandiri, dan menyediakan akses fleksibel ke sumber daya pendidikan. Hasil ini konsisten dengan studi sebelumnya yang menyoroti bagaimana teknologi pendidikan dapat meningkatkan keterlibatan siswa dan kinerja kognitif. Namun, hal itu juga menekankan betapa pentingnya keterlibatan guru dalam membantu pengembangan karakter siswa dan membimbing mereka. Temuan menunjukkan bahwa mengintegrasikan platform digital seperti Khan Academy dalam pendidikan geografi dapat secara signifikan mendukung pembelajaran jika dikombinasikan dengan partisipasi aktif dari guru.
Kata kunci : Pembelajaran Digital, Pendidikan Geografi, Pendidikan Ilmu Sosial, Khan Academy, Sumber Daya Pendidikan Terbuka

INTRODUCTION

Open Educational Resources (OER) refers to open-access learning and teaching materials that can be tailored and shared to meet the needs of learners. They include textbooks, course designs, and two-way modules that promote inclusivity and reduce economic barriers to learning (Lestari & Maulana, 2021; Yuliana et al., 2023). In this study, Khan Academy was the primary OER tool utilized during treatment time, engaging content to strengthen students' conceptual knowledge of geography (Fadillah & Salsabila, 2021; Indrawati et al., 2022).

Implementation Issues in Indonesia. All studies on education technology are conducted in developed nations, and in the majority of them, they have not been conducted in Indonesia. Additional research was necessary to guide specific issues that Indonesian teachers encounter when employing OER and computer facilities to enhance learning in geography, such as developing access and providing technical assistance (Pramono & Sutrisno, 2022). This study employed a quantitative case study to measure the effectiveness of Khan Academy as an Open Educational Resource (OER) in improving students' geographical awareness. Pre-tests and post-tests were used to measure students' knowledge gain before applying to Khan Academy (Suwandi et al., 2024; Hartono & Lestari, 2022).

The incorporation of technology into IPS education during the age of digital learning is not just an accretion but an essential strategy to enhance the quality and extent of education. The employment of OER in IPS provides learners with access to a greater diversity of perspectives and real-world contexts—interactive media, simulations, and visualizations, which are sometimes absent in traditional textbooks. Studies have found that the availability of online resources increases student engagement and helps in the formation of critical thinking skills, particularly if students are provided with diverse digital resources (Aisyah, 2024). Fifty students of the Social Science Education Program were selected through purposive sampling while maintaining mixed levels of digital literacy in participants. The approach allowed the researchers to investigate the reactions of students with different abilities toward the online treatment (Wibowo & Ananda, 2021; Sutrisno & Hidayah, 2024). The internet offers students a range of learning materials—such as videos, e-books, and interactive materials—that supplement traditional education, giving students more control over what they learn (Farid & Nursalim, 2022; Pratama & Nuraini, 2023).

Empirically, OER enhances the capacity of teachers to adapt materials to accommodate diverse learning styles and student needs, enabling engagement and better learning (Hasanah & Wulandari, 2024; Arifin & Sari, 2023). However, despite increasing interest in digital tools, teachers are generally constrained in their effective use by a lack of support and training (Suwandi et al., 2024; Syafii & Anggraini, 2024). The researcher's observation verifies the fact that proper professional development and infrastructural development are necessary to bridge this gap.

Lastly, this research highlights the revolutionary power of Khan Academy and other OER platforms to transform geography studies. Through intentional teacher training and institutional readiness, digital materials can be harnessed not only for content mastery but also to ensure equitable access to quality learning (Putra & Aisyah, 2021; Dewi & Sari, 2022). These findings contribute to the overall body of literature on digital transformation within education and the adoption of OER in the classroom in a sustainable manner (Ananda & Rahmawati, 2023; Widodo et al., 2024.

RESEARCH METHOD

This study adopts a quantitative research design using a case study approach to evaluate the impact of Open Educational Resources (OER), specifically Khan Academy, on students' understanding of geography. The quantitative method is applied through pre-and post-tests to determine the effectiveness of the intervention (Suwandi et al., 2024; Pratama & Nuraini, 2023). The primary focus is to assess whether Khan Academy can significantly improve students' geographical knowledge in formal education settings (Hartono et al., 2022; Lestari & Maulana, 2021).

The study involved 50 students enrolled in the Social Science Education Program. These participants were selected purposefully, considering their initial digital literacy levels and readiness to engage with online learning platforms (Wibowo et al., 2021; Ananda & Rahmawati,2023). The selection process was designed to ensure diverse competencies among students, enabling a more comprehensive analysis of the intervention’s effects (Sutrisno & Hidayah, 2024; Dewi & Sari, 2022).

The main research instrument was a structured pre- and post-test questionnaire designed to measure students’ geographical knowledge before and after the intervention. These assessments were aligned with the curriculum and focused on conceptual

understanding rather than memorization (Yuliana et al., 2023; Putra & Aisyah, 2021). Khan Academy served as the primary learning tool during the treatment phase, allowing students to access materials independently (Farid et al., 2022; Ramadhan & Oktavia, 2024).

Data collection was conducted in a structured manner to ensure the reliability and validity of the findings. Each stage of the research followed a consistent procedure, from administering tests to analyzing the results (Hakim & Zahra, 2023; Nursalim et al., 2021). This structured process helped isolate the effects of the OER intervention and minimized potential biases (Syafii & Anggraini, 2024; Maulana & Prasetyo, 2022).

The time, duration, and scheduling of the data collection were carefully organized to ensure that all students received equal exposure to the learning platform. Such consistency is essential to ensure fairness and comparability across participant experiences (Fadillah et al., 2021; Salsabila & Nugroho, 2023). The learning sessions were conducted over several weeks, allowing sufficient time for students to engage with the materials (Utami & Rachman, 2022; Hasanah & Wulandari, 2024).

In conclusion, this research offers empirical evidence on using OER, like Khan Academy, as an effective alternative to enhance geography education. The results are expected to encourage broader adoption of digital platforms in formal educational settings, especially in the post-pandemic era (Arifin & Sari, 2023; Widodo et al., 2024). The study contributes to ongoing discussions about the role of technology in supporting student-centered learning (Indrawati et al., 2022; Kurniawan & Dewi, 2021).

DATA ANALYSIS

Data reduction refers to the process of filtering and organizing raw data to focus on information that is relevant to the research objectives. This study applied quantitative data reduction to the pre-test and post-test scores. The raw scores were carefully cleaned to eliminate outliers and incomplete responses, ensuring the reliability of subsequent statistical analysis (Suwandi et al., 2024; Wibowo & Ananda, 2021). This process helped to enhance data accuracy and ensure that only valid, consistent data were retained for interpretation (Lestari & Maulana, 2021; Pratama & Nuraini, 2023).

Data selection was conducted to isolate only the most relevant and reliable data for analysis. For quantitative data, this included only students who had completed the pre-test and post-test. Incomplete responses were excluded from the final dataset to maintain the integrity

of the statistical results (Hartono & Lestari, 2022; Farid & Nursalim, 2022). This rigorous selection criterion ensured that the findings reflected genuine learning outcomes rather than anomalies or inconsistencies (Sutrisno & Hidayah, 2024; Yuliana et al., 2023).

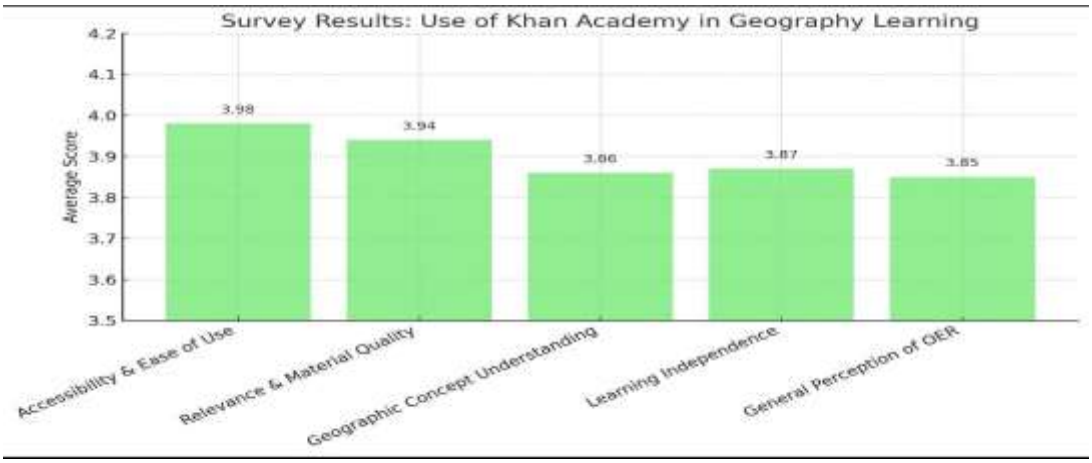
Triangulation was used to improve the credibility and depth of the research findings. By comparing results from multiple data sources—such as test scores, student questionnaires, and interview transcripts—the researcher was able to identify consistent patterns and discrepancies in the data (Ramadhan & Oktavia, 2023; Syafii & Anggraini, 2024). This approach allowed for a more holistic interpretation of Khan Academy's impact on students' geographical understanding.

The study applied methodological triangulation by incorporating both quantitative and qualitative methods. Quantitative data were analyzed through statistical methods based on the test scores, while qualitative insights were gathered from interviews and surveys to contextualize student experiences (Dewi & Sari, 2022; Kurniawan & Dewi, 2021). This mixed-method approach comprehensively understood how and why the OER intervention was effective.

To minimize potential bias, investigator triangulation was conducted. Multiple researchers were involved in independently analyzing the data and interpreting the results. By comparing their independent conclusions, the research team reached a more objective and balanced interpretation of the data (Hasanah & Wulandari, 2024; Widodo et al., 2024). This collaborative analysis process added further reliability and depth to the study's conclusions.

RESULT AND DISCUSSION

Picture.1 Questionnaire results Bar chart by category



Based on the questionnaire results regarding the utilisation of Khan Academy in geography learning, the overall average score is 3.98. This shows that students responded favourably to the use of digital platforms in the learning process. The five main categories measured in the questionnaire were accessibility and ease of use, relevance and quality of materials, improved understanding of concepts, learning independence, and general perception of the effectiveness of OER (Open Educational Resources).

This finding is in line with research conducted by ZBEREANU (2024) and Qomara et al. (2024), which confirmed that the application of educational technologies such as Khan Academy, augmented reality, and Flipped Classroom can improve student engagement, cognitive learning outcomes, as well as problem-solving skills. In addition, Manakane et al. (2023) and Syamsunardi et al. (2024) highlighted the importance of visual technology utilisation and understanding of geography concepts in shaping students' critical thinking skills.

Overall, the results of this questionnaire support the view that integrating technology in geography education provides real benefits, not only in understanding the material but also in building learning independence and flexibility of access. However, successful use of technology still requires an active role from teachers, as emphasised by Yasin et al. (2023) and Haan and Arifianto (2022), who state that teachers still have a key role in shaping character and supporting students in the evolving learning process.

Discussion

The findings of this study are in line with the broader discussion in the literature on integrating digital platforms in education and their impact on equity, learning autonomy and educational outcomes. One of the key challenges identified is the issue of unequal access to digital resources, which can exacerbate existing socioeconomic inequalities. As emphasised by Duggi et al. (2025), limited access to technology negatively impacts education, healthcare and employment opportunities for marginalised communities. Pettalongi et al. (2024) further emphasised the importance of inclusive education policies to ensure equitable access to digital learning tools for all students.

At the same time, learner independence is also important in digital learning. Enabling students (in particular to adult students) to take charge of their learning by developing goal setting and recognition of achievement has been found to be effective in enhancing both

motivation and confidence (Chakraborty, 2024; Алимбаев, 2023). This is especially true in English language learning, in relation to where autonomy can play a crucial in the amount of participation and skills that one can develop outside classroom setting.

In addition, the convenience provided by digital platforms such as Khan Academy supports independent learning, allowing students to access materials anytime and anywhere. This flexibility supports independent learning, encouraging critical thinking and deeper understanding, as suggested by Yanti (2024) and Englmeier (2024). However, to implement these models successfully, adequate infrastructure and teacher readiness are required to ensure that all students benefit equally. This understanding emphasises the importance of addressing both technological and pedagogical aspects of integrating digital resources into education.

CONCLUSION

Integrating online resources and Open Educational Resources (OER) in education is more than just a trend—it's part of a broader shift in how we approach teaching and learning. This evolution is supported by well-established theories such as constructivism, self-directed learning, and multimedia learning theory. These frameworks emphasize the value of interactive, flexible, and learner-centered environments, where students can engage with content at their own pace and according to their learning styles.

Platforms like Khan Academy exemplify how these theories can come to life practically and meaningfully. By offering instructional videos, interactive exercises, and open access to a wealth of topics, Khan Academy creates a personalized learning experience that empowers students. For Social Studies learners, especially those studying geography, digital tools like this make complex or abstract concepts more accessible through visualizations, simulations, and engaging multimedia formats.

This study draws upon those educational theories to explore how digital resources can specifically enhance geography education. Rather than viewing technology as a standalone solution, it is examined through a pedagogical lens—looking at how it supports deeper understanding, encourages curiosity, and promotes active engagement with the subject matter. The goal is to understand better the intersection between technology and pedagogy in the classroom.

In conclusion, when grounded in sound educational theory, digital resources can potentially transform the learning experience. They support academic achievement and foster

a more inclusive, student-driven approach to education. As technology continues to evolve, so too must our teaching methods—ensuring that tools like Khan Academy are used not just for convenience but as catalysts for meaningful, lasting learning

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