Bibliometric Analysis: Exploring Research Trends in the Use of Google Sites in the Education Sector

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Abstract: *Bibliometric analysis has become a powerful tool for mapping research concepts across various fields. However, the application of bibliometrics in education, particularly concerning the use of Google Sites, remains an untapped potential. This study aims to explore trends and research topics related to the utilization of Google Sites in education during the 2016–2024 period. Using the Dimensions database, we collected relevant publications and visualized them using VOSviewer. An in-depth analysis was conducted with a focus on bibliographic pairs of countries, institutions, journals, authors, and frequently used author keywords. From 495 publications that met the criteria, the findings revealed that Indonesia is the country with the most significant contribution to research on Google Sites in education. Additionally, the Jurnal Penelitian Pendidikan IPA emerged as the primary publication platform, Rogerson (2017) as the most-cited author, and Yogyakarta State University as the most productive institution. These findings indicate a growing interest in the use of Google Sites in education in Indonesia. However, further research is needed to delve deeper into the impact of using Google Sites on learning processes and student outcomes.*

Key Words*:* bibliometric, google sites, education

Introduction

Google Sites is a feature from Google that facilitates the creation of simple websites for learning and information sharing. It is easily accessible and can be used anytime, anywhere (Doloksaribu, Frince S, & Manurung, 2024). When used as a learning medium, Google Sites helps students retain learning materials and offers a high level of interactivity (Hakim & Pertiwi, 2023). In recent years, the use of Google Sites has become a trend across various regions in Indonesia as a form of digital learning training. Google Sites is often chosen due to its user-friendly features, making it particularly accessible and understandable for teachers from Generation X, individuals born between 1965 and 1985 (Suprayogi et al., 2023). Google Sites serves as an effective tool for fostering collaborative knowledge development while also supporting project-based learning (Toyib, Faiziyah, & Yuliana, 2024).

Google Sites-based learning media has the advantage of facilitating quick access to information. This is because the platform allows the integration of various files and information from Google services, such as Google Docs, Sheets, Forms, YouTube videos, and other customizable components that can be shared according to user needs (Johdi & Ayub, 2024). Based on the Dimensions web search results, the increasing popularity of Google Sites in education is illustrated in Figure 1.

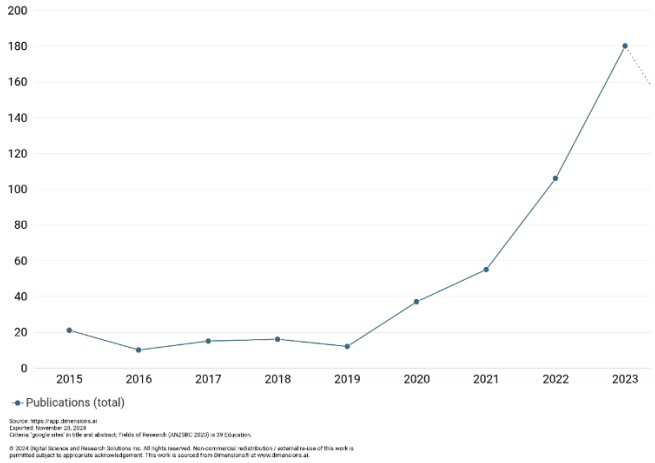

Figure 1. Graph of Research on the Use of Google Sites

Based on the figure above, it is evident that the number of publications related to the use of Google Sites in education has increased yearly, with 2023 being the peak year for its utilization. Educators can design learning materials, create assignments, add syllabi, and include various other content. The materials provided are not limited to text but can also include images, videos, and even practical simulations, giving educators the flexibility to deliver diverse learning experiences. Another advantage is its ease of access, as students only need a device, such as a smartphone or laptop connected to the internet, to use it (Islanda & Darmawan, 2023).

This study aims to explore trends and research topics related to the utilization of Google Sites in education during the 2016–2024 period. Bibliometrics is a commonly used method for analyzing and evaluating publications within a specific field (Ernando & Atmojo, 2024). This approach aims not only to assess the quality and quantity of academic research published but also to identify emerging publication patterns over time (Sulaiman Kurdi, 2021). Bibliometric analysis is a scientific method beneficial for researchers seeking to retrospectively trace the development of a broad and rich research area (Catur, Saputra, & Purnomo, 2023). One of the frequently used applications for bibliometric analysis is VOSviewer, developed by van Eck and Waltman. VOS stands for *Visualization of Similarities*. This software is designed to generate research maps based on data from a network or database (Van Eck, 2020).

This bibliometric study utilizes metadata based on the Dimensions database. According to Tjahjono, et al., (2024), Dimensions is a modern platform powered by artificial intelligence (AI) that enables users to explore and analyze literacy data from various sources, including Reference Manager (RM). Dimensions also provides analytical features that allow users to view the number of articles by publication year, the journals that published them, and the authors' names (Yogha Pratama et al., 2024).

Previous research has highlighted the benefits of Google Sites as an alternative medium that teachers can utilize to support teaching and learning activities during the pandemic. The study also revealed how students responded to the learning process during the pandemic by using Google Sites (Khasanah & Muflihah, 2021).

According to Yulianandа & Sakti., (2022), Google Sites-based learning media is effective in improving students' learning outcomes. It is considered practical and can be used by both teachers and students across various devices such as smartphones, tablets, and PCs.

Method

This study employs a systematic quantitative method. It uses the Dimensions database for bibliometric analysis and searches for literature on the use of Google Sites in the field of education. Bibliometric analysis is utilized for several reasons, one of which is to identify emerging trends in articles and journals.

This study examines articles related to the use of Google Sites in the field of education. Therefore, the researchers used the keywords "Google Sites" AND "Education." The search resulted in 495 publications that met the established criteria. The obtained metadata was then stored for further analysis. The selected articles were analyzed using VOSviewer software, which can generate bibliometric network visualizations and provide informative analysis and evaluation. Through VOSviewer, bibliometric maps can be visualized in three forms: density visualization, network visualization, and overlay visualization, based on co-citation networks that cover various current topics. Subsequent data analysis was conducted deductively, starting from general findings and moving toward more specific ones, such as: bibliographic pairs of countries, bibliographic pairs of institutions, bibliographic pairs of journals, bibliographic pairs of authors, and co-occurrence of author keywords. This approach allows readers to follow the information from general to more specific details.

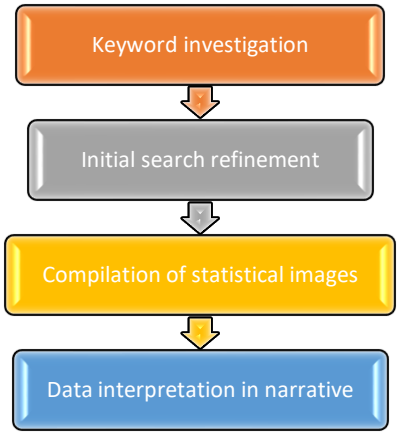

Figure 2. Stages of Bibliometric Analysis

Results and Discussion

This study uses a deductive approach to present the analysis results, starting from general findings and progressing to more specific ones, such as bibliographic pairs of countries, bibliographic pairs of institutions, bibliographic pairs of journals, bibliographic pairs of authors, and the keywords used by the authors. This approach allows readers to acquire information gradually, from a general overview to more in-depth details.

Figure 3. Visualization of bibliographic network by country

Figure 3 above shows that Indonesia is the country with the highest number of publications related to Google Sites. It can be observed that Indonesia has the largest circle, indicating that it has the highest level of collaboration with other countries. The larger the circle, the higher the score or the number of occurrences of the item (Purba Winata & Axel, 2023).

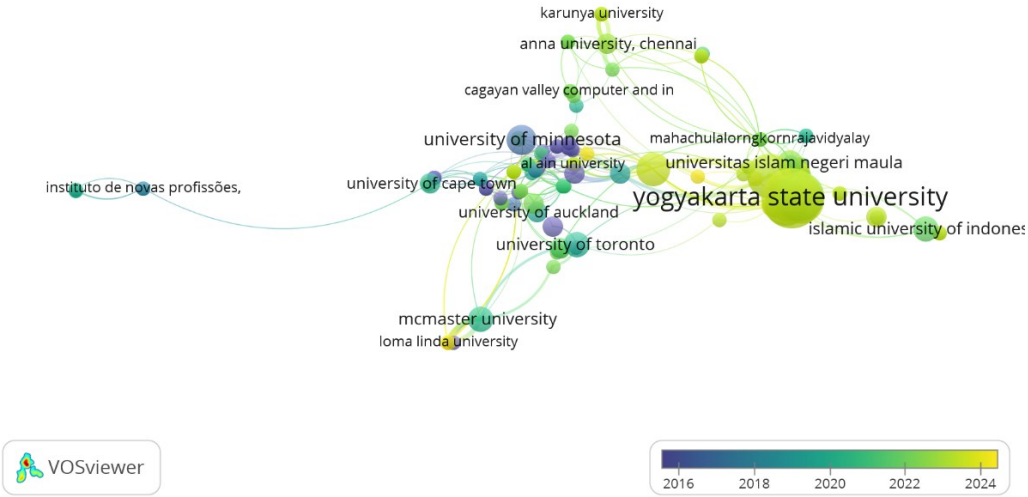

Figure 4. Visualization of bibliographic network by institution

Based on the figure above, it shows that Yogyakarta State University has the largest circle, indicating that the university has many publications related to Google Sites in the years 2023-2024, marked by a yellow-green color. The university that dominates the most in 2024 is Loma Linda University, marked in yellow. This may be due to the active academic community at Yogyakarta State University, which likely supports research related to the use of media platforms, including Google Sites in education, through conferences or other discussion forums, leading to the publication of more articles.

Figure 5. Visualization of bibliographic network by journal

The figure above shows that the *Jurnal Penelitian Pendidikan IPA* holds the highest position in 2024, marked by a large yellow circle with 20 documents. However, *JMIR Medical Education* has the highest number of citations, as seen in Figure 6. This indicates that the journal receives research related to Google Sites and has a good journal accreditation, which is why many researchers choose to publish their work there.

Source	Documents	Citations
jurnal penelitian pendidikan ipa	20	35
advances in social science, education ...	7	2
elearning and software for education	7	2
jmir medical education	5	174
aip conference proceedings	5	1
journal of extension	4	9

Figure 6. Number of documents and journal bibliographic citations

Document	Citations
rogerson (2017)	103
bialy (2015)	81
judd (2011)	81
haigh (2010)	63
stewart (2011)	61

Figure 7. Bibliographic data of documents

In this stage, the researcher used a threshold by displaying the top 5 documents, sorted by the highest number of citations at the top. The figure shows that Rogerson (2017) is the most-cited article in Google Sites research in the field of education, with 103 citations. This indicates that the article is relatively easy to find and is of high quality for use in other research purposes.

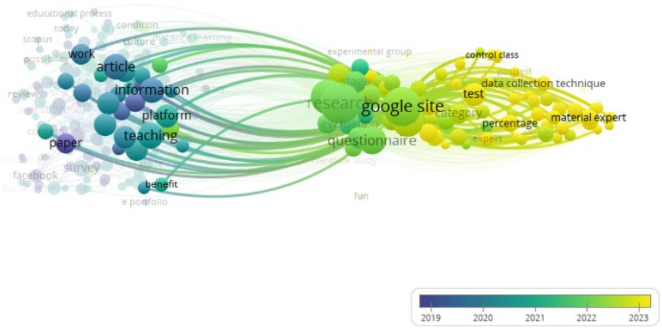

Figure 8. Visualization of bibliographic network by keywords

In the figure above, the size of the circle indicates that Google Sites has become the most frequently found keyword. The larger the size of the circle, the more the keyword is used by researchers related to the use of Google Sites in the field of education, particularly around 2022 (Nunung Sanusi, 2023). The figure also shows several colors, indicating changes in keywords over specific time periods.

Conclusion

Many researchers have conducted studies related to the use of Google Sites in the field of education. This is reflected in the high number of scientific articles published, with the peak of publications occurring in 2023-2024. Indonesia is recorded as the country with the largest contribution in this field. However, this study has some limitations, such as the data analyzed being sourced only from the Dimensions database. Therefore, the researchers recommend that future studies incorporate more data sources from other databases. Additionally, this study focused solely on the use of Google Sites in education within the 2016-2024 timeframe, so it does not provide insights into future research trends. Further research is needed to explore in greater depth the impact of using Google Sites on the learning process and students' learning outcomes.

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