

Literature Review How Social Media Affects Student's Learning and Education: Bibliometric Analysis

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Abstrak

Penelitian ini menggunakan analisis bibliometrik untuk mengisi kekosongan dan memberikan gambaran tentang bagaimana media sosial memengaruhi pembelajaran dan pendidikan siswa dari tahun 2014 hingga 2024. Tujuan spesifik dari penelitian ini adalah untuk meninjau jenis publikasi, negara yang berkontribusi, penulis yang paling sering dikutip, dan judul sumber teratas, memetakan pola penelitian, serta menentukan platform media sosial mana yang paling banyak digunakan untuk penelitian. Metadata berasal dari basis data Scopus, sedangkan pemetaan menggunakan database VOSviewer yang mencakup 108 penelitian. Hasilnya menunjukkan bahwa publikasi tentang pengaruh media sosial terhadap pembelajaran dan pendidikan siswa meningkat seiring waktu, dengan jenis publikasi yang paling umum berupa artikel, dan Amerika Serikat menjadi negara paling produktif. Y.R. Chassiakos adalah penulis yang paling banyak dirujuk, dengan *Computers and Education* menjadi judul sumber paling populer. Pemetaan tren penelitian mencakup: 1) efek media sosial terhadap motivasi, perilaku, dan sikap; 2) jenis model pembelajaran seperti e-learning dan blended learning; 3) penilaian dalam pendidikan; 4) platform media sosial; 5) akses ke internet; 6) kinerja pembelajaran daring; 7) strategi pengajaran akibat pandemi. Tiga platform media sosial teratas yang paling sering digunakan dalam penelitian adalah YouTube, Twitter, dan Facebook.

Kata kunci: media sosial; pendidikan; pembelajaran siswa; bibliometrik

Abstract

This research uses bibliometric analysis to fill in the gaps and present an overview of how social media influences students' learning and education from 2014 to 2024. The precise goals of this study are to examine the kind of publication, contributing nation, top authors cited, and top source title, map research patterns, and determine which social media platform was utilized the most for the research. The metadata is from the Scopus database, while the mapping is from the VOSviewer database, which contains 108 research. The results suggest that the publishing of the influence of social media on students' learning and education has risen over time, with the most common kind of publication being an article, and the United States is the most prolific. Y.R. Chassiakos is the most referenced author, with *Computers and Education* being the most popular source titles. Mapping of research trends are: 1) social medium effect for motivation, behavior, and attitude; 2) Type of learning models such as e-learning, and blended learning; 3) assessment for education; 4) Social media platform; 5) access to internet; 6) Online learning performances; 7) Teaching strategy because pandemic. The top 3 social media platforms from media that the studies used were YouTube, Twitter, and Facebook.

Keywords: social media; education; students learning; bibliometric

INTRODUCTION

Social media has become an integral component of contemporary society's daily existence. The widespread use of social media due to rapid technology advancements has had a huge influence on all parts of life, including education. Social media serves not only as a platform for connection and pleasure, but also as a

valuable resource for accessing information and acquiring knowledge.

The fast progress of information technology is accompanied by the widespread usage of social media, which is a dominant phenomenon. Social media platforms such as Facebook, Twitter, Instagram, TikTok, and YouTube have become an essential and inseparable component of our daily existence (Boyd & Ellison, 2007).

This phenomenon also impacts other facets, encompassing education and the acquisition of knowledge by students. Originally, social media was primarily recognized as a medium for communication and amusement. Nevertheless, its utilization has gradually extended to several industries, including the field of education.

Research by Junco (2012) shows that the use of social media among university students can affect their learning motivation and academic performance. Social media allows information exchange and collaboration without time and space constraints, thus opening up new opportunities in the learning process. However, many also question its negative impact, especially in terms of distraction and the spread of invalid information (Kirschner & Karpinski, 2010).

Research by Indrawati et al. (2018) further shows that social interactions conducted through social media can affect student academic outcomes. This is a special case that warrants further study, given the abundance of empirical data supporting various sides of this relationship. For example, many students report that they become more motivated to learn when communicating with their peers through social media (Madge et al., 2009).

Therefore, one way to understand the effects of social media on education is to conduct a literature review and bibliometric analysis. This analysis helps in recognizing the existing literature and its research patterns. Fox & Bird (2017) note that a bibliometric review of the education literature can provide a map of research developments and identification of under-researched areas. It can also help in identifying trends and gaps in existing research, and guide future researchers in developing their studies.

The literature on the impact of social media on education addresses at least two main aspects: positive and negative impacts. Frequently reported positive impacts include increased motivation to learn, easier access to information, and effective collaboration between students and teachers (Manca & Ranieri, 2016). On the other hand, widely recognized negative impacts include distraction, decreased learning quality, and potential mental stress due to various forms of interaction on social media (Pempek et al., 2009).

This phenomenon has become even more relevant during the COVID-19 pandemic when many educational institutions are turning to online learning. Social media has become the main tool for distance learning and interaction between students and lecturers. Given this, a study by Moorhead et al. (2013) suggested that social media played an important role in disseminating health information and education during the pandemic. In the context of education, social media bridges physical separation and provides a platform for discussion and

exchange of academic information, which may not have been explored much before the pandemic.

However, negative aspects such as the spread of hoaxes and invalid information are serious problems with the use of social media in education. This was reported by Cullinan et al. (2015) who stated that students are often exposed to invalid information or fake news, which in turn can affect the quality of their learning. Researchers emphasize the importance of digital literacy in using social media as a learning tool to minimize these negative impacts.

The study conducted by Hossain et al. (2022) utilized bibliometric analysis to examine the influence of social media on higher education during the COVID-19 pandemic. Bibliometric, which is a collection of methodologies for research or measurement of text and information, has been a basic tool of scientific policy and administration of research in recent decades (Krisnaningsih et al., 2021). Academic institutions, in particular, are increasingly relying on quotation analysis to make recruitment, promotion, holders, and financing options. Bibliometric research has been widely used in the scientific sector, focusing on various types of information such as authors, titles, subjects, quotations, and so on (Khoir et al., 2022). Filters using bibliometric approaches will help the scientific community and the general public as they can help put the publication metadata into maps or visualizations that can be understood by readers, such as showing keywords to find research topics (clusters) in a particular topic. Bibliometrics has been used to examine trends, which include research areas, document sources, publication outputs, documentation sources, language sources, country and institutional distribution, top authors, number of quotes, and authors keywords (Deta et al., 2021).

However, it is worth noting that this study relied on data obtained from the Web of Science database. It is recommended to do bibliometric analysis on other databases to have a more comprehensive picture of the issue under investigation, based on the findings of those research.

The relevant research has been conducted Abdullahi et al. (2024) with the title "Social Media Addiction and Academic Performance: A Bibliometric Analysis Approach" The findings revealed a consistent rise in scholarly interest in the topic, although the global COVID-19 pandemic had a noticeable impact on the number of articles in 2020. Previous research examined bibliometric analysis of academic performance, it is necessary to update the previous research with a different topic, namely student learning and education, with the renewal of the range of years analyzed is the last ten years (2014-2024). This project aims to do a bibliometric analysis to examine the impact of social media on students' learning and education from 2014 to 2024. The analysis will utilize the metadata available in the Scopus

database and will be facilitated using the VOSViewer mapping tool. The purpose of this study was to identify and analyze current research trends, patterns, uniqueness, and potential research prospects for further exploration. Specifically, the objectives of this research are as follows:

1. Analyzing the type of publications and countries that contributed to the analysis of the effect of social media on students' learning and education during 2014-2024
2. Analyzing the top research citations, and top sources titles that contributed to the analysis of the effect of social media on students' learning and education during 2014-2024
3. Identifying the results of research trend mapping visualization that contributed to the analysis of the effect of social media on students' learning and education during 2014-2024
4. Exploring the studies that became the top 3 social media platforms from all studies that contributed to the analysis of the effect of social media on students' learning and education during 2014-2024

RESEARCH METHOD

This research involves doing bibliometric analysis utilizing library resources. A bibliometric study was conducted to assess the impact of articles on the progression of knowledge by examining the distribution of publications. Diverse literature employs a statistical methodology and can yield insights into a broader array of academic fields (Krisnaningsih et al., 2021; Prahani, Alfin, et al., 2022; Prahani, Rizki, et al., 2022). To analyze the publication data, this study uses Scopus database collecting through Publish or Perish, and visualized using VOSviewer.

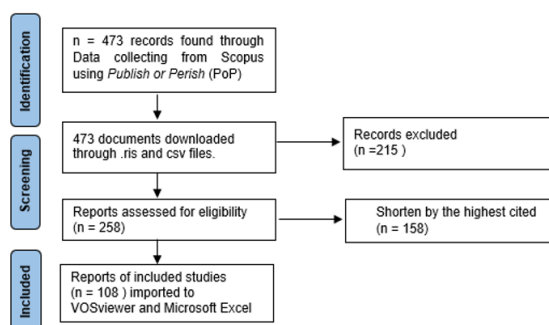


Figure 1. Research Steps

The data was collected on June 12, 2024. The search yielded a total of 473 documents. The results were sorted based on their "citation count" in descending order, and then the papers were extracted into .ris and .csv formats for further processing. Subsequently, the data was filtered exclusively for English languages, resulting in the exclusion of 215 items at this step. Moreover, the

108 most referenced publications were downloaded in .ris and .csv formats. Next, import the files into VOSViewer program to provide a comprehensive analysis of the data and provide a visual representation of the bibliometric mapping. The data analysis was further conducted by examining the top 5 papers that had the highest number of citations, depending on the research findings.

RESULT AND DISCUSSION

Year of Publication distribution, document types, and countries contributed to the analysis of the effect of social media on students' learning and education during 2014-2024

The distribution of research publications on the analysis of the effect of social media on students' learning and education during 2014-2024 can be seen in Figure 2.



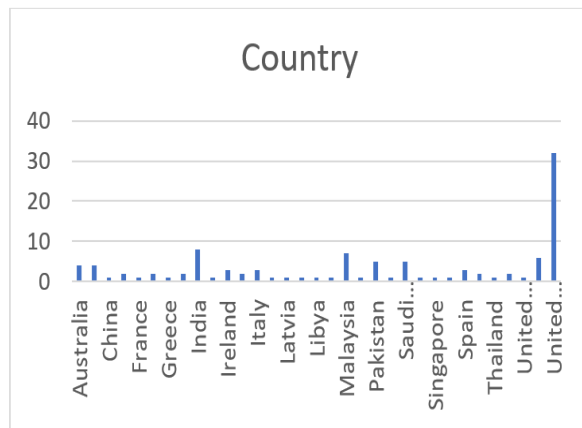
Figure 2. Year of Publication

According to Figure 2. We knew that from 2018 to 2019 the graphic was dropped because in 2019 there was a COVID-19 pandemic, but from 2019 to 2021 the publication was increased because during COVID-19 all learning in the world was done online. In that year publications about online learning due to COVID obtained 26 data.

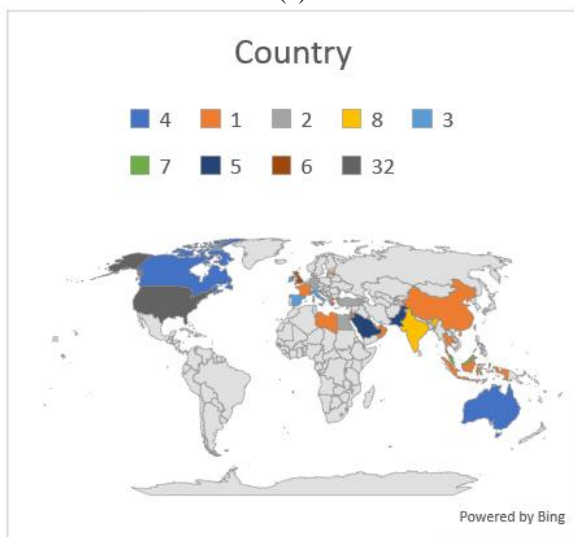
Figure 3 displays the many papers analyzed about the impact of social media on students' learning and education from 2014 to 2024. The dataset comprises 83 papers, 21 reviews, 2 conference studies, 1 book, and 1 editorial. Researchers typically publish publications that are deemed superior in quality when compared to others.



Figure 3. Type of Publication



(a)



(b)

Figure 4. Countries contributed to the analysis of the effect of social media on students' learning and education from 2014 to 2024

The graphic results show that 32 countries have contributed to the analysis of the effect of social media on students' learning and education from 2014 to 2024. The

United States leads the productivity with 32 studies with the highest year of publication in 2017 consisted 6 studies, followed by India With 7 studies, then the United Kingdom with 6 studies.

3.2 The top cited authors, and top sources titles contributed to the analysis of the effect of social media on students' learning and education during 2014-2024

Table 1 shows the top 10 cited authors, based on the top cited authors, Y.R. Chassiakos, A.M. Kaplan, S.F. Tsao, and M. Westerlund were the authors with the most citations namely 660 cites. The metric search results from Table 2 show that Computers and Education were the highest source titles with 13 studies. Followed by Computers in Human Behavior, and Sustainability (Switzerland).

Table 1. Top cited authors

Cites	Authors	Year of Publication
660	Y.R. Chassiakos	2016
475	A.M. Kaplan	2016
441	S.F. Tsao	2021
408	M. Westerlund	2019
367	M. Al-Balas	2020
361	A. Alsoufi	2020
329	R.H. Hariri	2019
306	K. Chaturvedi	2021
304	S. Manca	2016
287	D. Alt	2015

Table 2. Top Source Titles

Source Titles	Total
Computers and Education	13
Computers in Human Behavior	11
Sustainability (Switzerland)	6

The results of research trend mapping visualization that contributed to the analysis of the effect of social media on students' learning and education during 2014-2024

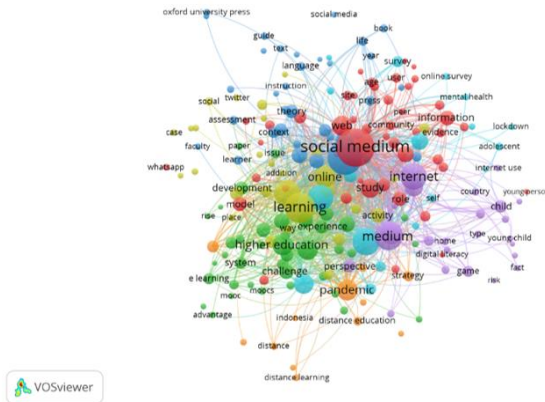
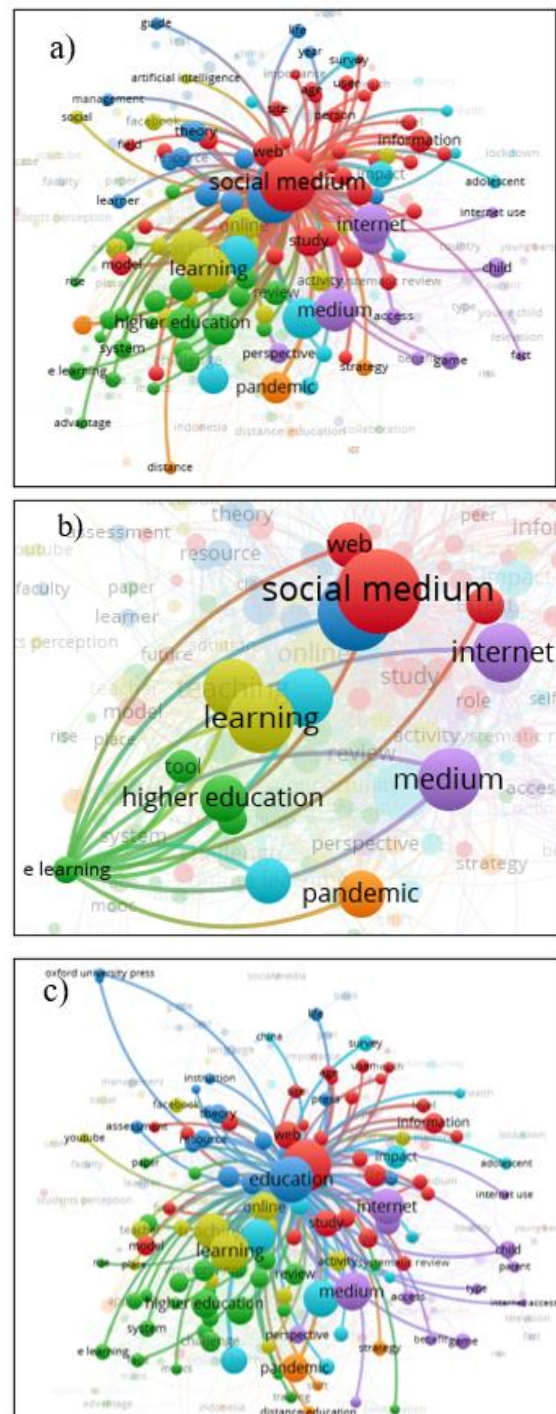


Figure 5. Mapping visualization of keywords co-occurrence on all studies that contributed to the analysis of the effect of social media on students' learning and education during 2014-2024

Figure 5 depicts a graphical representation of the co-occurrence of keywords in all the studies that were analyzed to investigate the impact of social media on students' learning and education from 2014 to 2024. The purpose of this visualization is to identify any new findings and the connections between different research. The mapping visualization displayed a total of seven primary groupings. The initial cluster was identified by red nodes ($n=46$) encompassing social media, digital literacy, social network, motivation, behavior, and attitude. The second cluster was identified by green nodes ($n=39$) comprising e-learning, blended learning, approach, environment, and development. The third cluster, comprising of 33 blue nodes, was characterized by the presence of education, class, learner, and instructor. The fourth cluster, consisting of 29 yellow nodes, is centered around social media sites like Twitter, YouTube, and Facebook, as well as gaming. The fifth cluster, consisting of 26 purple nodes, is centered around the topics of internet access, viewpoint, risk, profit, and change. The sixth cluster has 20 light blue nodes, which include mental health, performance, satisfaction, impact, and factors. The seventh cluster, comprising of twelve orange nodes ($n=12$), encompasses topics such as online education, distance learning, the learning process, and the pandemic. To identify uniqueness, one might examine the correlation between the smaller or fewer keywords in the mapping result. For instance, social media platforms are predominantly utilized in the context of higher education due to the presence of age restrictions on some platforms.



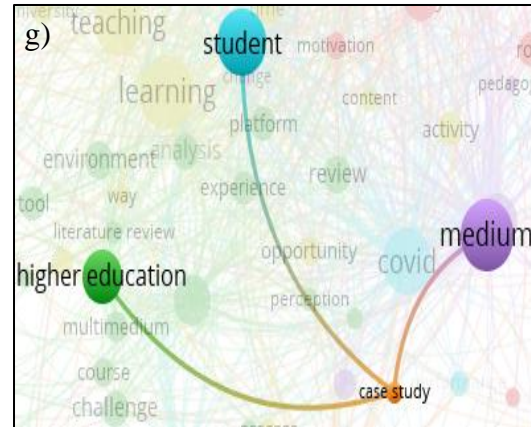
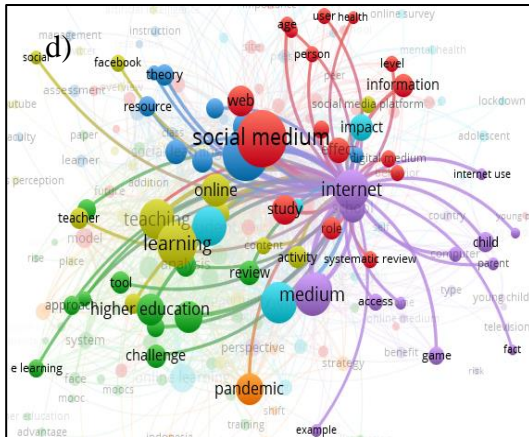
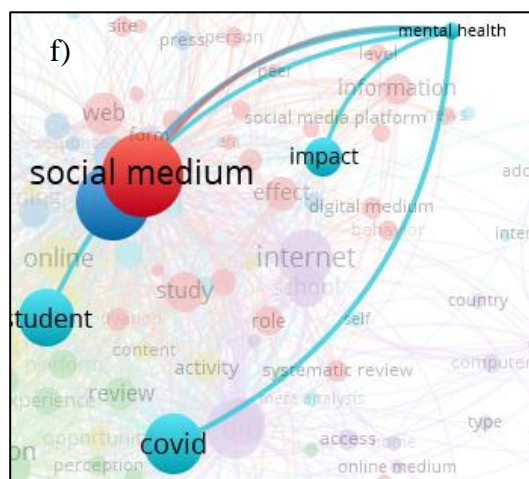
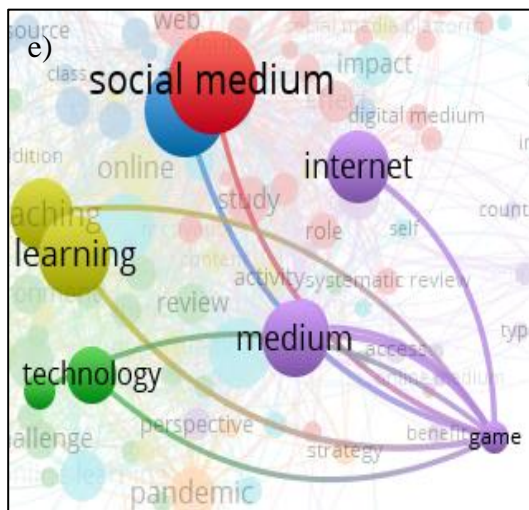


Figure 6. Some specific keywords mapping results on the topic of a) social media, b) e-learning, c) education, d) internet, e) game, f) mental health, g) case study



Figures 6a-6d represented the most prominent patterns seen in all the research that were included in the study of the impact of social media on students' learning and education from 2014 to 2024. Conversely, figures 6e-6g depicted the contrasting tendencies. If future scholars wish to further investigate the impact of social media on students' learning and education, there are still numerous and diverse areas and concepts to study. Social media has the potential to revolutionize students' learning and education in several ways. Figure 6e-6g can serve as alternative keywords for researchers interested in studying the impact of social media on students' mental health, as well as the utilization of games for educational purposes.

Review of studies that use the top 3 social media platforms

From reviewing the studies that contributed to the analysis of the effect of social media on students' learning and education during 2014-2024 the top 3 social media platforms that research used were YouTube with 36 studies, Twitter with 27 studies, and Facebook with 23 studies. From all those studies we choose the top 3 cited studies on every social media platform.

a. Youtube

Barry et al. (2016) with the finding YouTube was the main learning media (video) for most pupils. YouTube is gaining prominence as a valuable tool for students studying anatomy. Medical education occasionally fails to address certain concerns through editorial letters in journals or the perspectives of doctors, relying instead on personal experiences.

Klobas et al.,(2018) with the finding Excessive reliance on YouTube might detrimentally affect students' academic motivation as it indicates a lack of self-control in managing academic

responsibilities within the educational setting. Gaining insight into the factors that contribute to compulsive YouTube usage among students and facilitating its reduction is crucial, as students should possess the ability to effectively regulate their YouTube consumption.

Ferhatoglu et al. (2019) the finding was Medical research have found that films uploaded by YouTube users are less accurate and less dependable. The approach devised by healthcare experts has the potential to enhance public health consciousness, and YouTube may serve as a valuable medium for disseminating accurate information to the public.

b. Twitter

Tang & Hew (2017) the result is Twitter is frequently utilized for the purposes of communication and evaluation. The relationship between Twitter use and learning performance has not been definitively demonstrated. Most research reported favorable learner reactions to Twitter as a tool.

Evans (2014) There is an increasing desire to engage in social media networks, like Twitter, to enhance the professional growth and learning of educators.

Xing & Gao (2018) with the finding Twitter usage had a positive impact on the learning experience, and its influence on academic motivation. Using Twitter is an effective way to engage students.

c. Facebook

Manca & Ranieri (2016) Facebook has benefits as a tool for media learning (generic social network). Social media use is still limited and rather restricted, and paramedics are not very inclined.

Asterhan & erg (2015) Students appeared to get advantages from the chance to offer input to their classmates, as opposed to only receiving evaluation. This allows students to carefully contemplate their thoughts and criticisms before presenting them.

McCarthy (2017) with the finding Teachers using Facebook as a means of establishing and sustaining communication with their pupils. Facebook is commonly perceived as a platform for engaging in social interactions, establishing, and nurturing connections. It diverts users' attention away from learning and instructing. Higher education students using Facebook for academic purposes.

CONCLUSION

The researchers indicated some significant points regarding the research on the effect of social media on students' learning and education in 2014-2024 using bibliometric analysis with the Scopus database and VOSviewer application

1. The publications on the effect of social media on students learning education in education increased

over the years, with the most type of publication being an article (83), and the most productive country is the United States (32).

2. Y.R. Chassiakos is the most cited author (666), and Computers and Education were the highest source titles with 13 studies
3. Research tren mapping shows that the trends during 2014-2024 are: 1) social medium effect for motivation, behavior, and attitude; 2) Type of learning models such as e-learning, and blended learning; 3) assessment for education; 4) Social media platform; 5) access for internet; 6) Online learning performances; 7) Teaching strategy because pandemic.
4. The top 3 social media platforms from media that the studies used were YouTube (36), Twitter (27), and Facebook (23). On the YouTube platform, the students used to watch videos for learning media but sometimes the videos were less reliable. Twitter and Facebook, the students and learners use that for communities to discuss academic goals and others.

The limitation of this research is that the sources used are only from one database, namely the Scopus database. The results of this bibliometric analysis research on how social media affects student learning and education can be used as a reference to conduct similar research by developing this idea to increase research contributions on different topics and based on different databases and different year ranges. Therefore, it will help to narrow down the trends that will be developed in this field of research.

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