

## BIBLIOMETRIC ANALYSIS OF SOCIAL MEDIA STUDIES WITHIN EDUCATIONAL RESEARCH

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### ABSTRACT

The digital transformation in higher education can be observed in numerous ways and practices. Recently, post-pandemic digitalization played a significant role in the increase of the educational use of digital technologies such as artificial intelligence, virtual reality, augmented reality, extended reality, and social media. Among these, social media has dominated daily life long before the rest of the technologies. Hence, examining the current situation of social media studies within educational research aids in envisioning the future vision. This study aims to outline the trends in the use of social media platforms by analyzing

them within educational research published between 2017-2023. For this purpose, 473 articles in the Web of Science database were examined regarding the dimensions of publication year, country of publication, author, keyword, article type, the method used, sampling, data collection tools and analysis methods, and social media use. The findings of this study are believed to guide practitioners and researchers in their practice and consideration of social media within educational environments.

**Keywords:** Social media, social media studies, bibliometric analysis, educational research.

## INTRODUCTION

Social media provides a powerful means of communication platform where users can basically share information, chat, and interact. According to We Are Social (2024), the number of active social media users in the world reaches 5.04 billion. As of 2024, the most frequently used social media platforms are listed as Facebook, YouTube and WhatsApp. The survey conducted with individuals aged 16-64 reveals three key reasons for social media use: keeping in touch with friends and family, spending their free time, and reading the news. Moreover, according to the Pew Research Center (2023), numerous 13- to 17-year-old teenagers in the U.S.A. regularly use social media platforms such as YouTube, TikTok and Snapchat. Social media seems to prevail and expand in the daily lives of people all around the world.

Immersive digital transformation including social media has affected education as well as other fields such as health, politics, and sports. Studies on the educational use of social media date back to the “social media classes” created by Howard Rheingold in the 1980s (Blankenship, 2010). Within this context, research has presented both negative and positive results regarding the use of social media in education.

## LITERATURE REVIEW

In the broadest sense, online communication and exchange between individuals constitute social media. Poore (2015) points out the unlikelihood of making a single and broad definition of social media due to its wide scope and identifies the qualities that characterize social media as “*participation, collaboration, interaction, communication, community building, sharing, networking, creativity, distribution, flexibility, and customization*”. Similarly, Carr and Hayes (2015) define social media as “internet-based channels that allow people to interact opportunistically and self-represent selectively either synchronously or asynchronously while engaging users who develop user-generated content”. It is seen that the definition of social media is subject to variations such as the dynamic conditions and contexts, and its users.

The constant relationship between the media and education has progressed with the growing integration of media tools; the use of radio and television in education was followed by the incorporation of computers. All these highlight the relevance and significance of media within educational contexts. A leading motivation to prefer social media use in daily life communication might relate to the unidirectional and one-to-many feature of traditional media; on the other hand, social media can be bidirectional and even versatile (Wilks & Pearce, 2011). Despite the vitality of these platforms, their undesirable effects on people’s educational lives cannot be disregarded. For instance, Yilmazsoy, Kahraman, and Kose (2020) investigate the negative aspects of WhatsApp use in education and point out its potential adverse effects on students’ academic achievement and reading comprehension levels.

Compared to the traditional learning method, which provides little opportunity for students to manage their learning activities, learning platforms based on social media put the students in control of their learning (Raut-Vishranti & Patil-Prafulla, 2016). According to Poore (2015), social media platforms provide learning and student-centered rather than teacher-centered practices; they allow students to engage actively and creatively in their learning. In this direction, Dabbagh and Kitsantas (2012) state that self-practice opportunities offered by social media environments allow students to self-regulate by acquiring basic and complex knowledge management skills that help manage and advance their learning. This indicates the effectiveness of social media in multiple forms such as personalized-individualized, self-regulated, and self-

directed learning. Correspondingly, Sarsar, Basbay, and Basbay (2015) conclude their research by underlining the role of social media as a learning environment with a potential contribution to enjoyment, satisfaction, professional and personal gains, and achievement.

In addition to social media's use for personalized learning, its communication and interaction aspects contribute to education, since education systems are built on social interaction with recurring interaction between students, teachers, and staff. Vollum (2014) states that social interaction in education increases the learning experience and success for students; social media stands out as a popular way to increase or encourage social interaction. For instance, teachers can interact with their students through platforms such as Facebook or WhatsApp and share the course materials. Students can cooperate to meet their common learning purposes, can exchange their ideas, course-related information, and materials in their social groups; they can even collaborate to complete their homework. According to the study by Babu et al. (2022) students' access to course materials via Telegram, an online messaging application, clearly influenced their self-directed learning skills. Moreover, the analysis of Twitter use in formal education by Kruger-Ross, Waters, and Farwell (2012) demonstrates how teachers can get instant answers from their students on Twitter, and how this boosts the participation level of reluctant students who feel more comfortable engaging anonymously. Intensive use of social networks on Facebook has been reported to affect online social behaviors (Raza, Usman, & Ali, 2022), influence depression, social anxiety, and self-regulation skills (Foroughi, Iranmanesh, Nikbin, & Hyun, 2019), impact students' psychological well-being (Hong, Huang, Lin, & Chiu, 2014), and affect social support and communication (Tang, Chen, Yang, Chung, & Lee, 2016). In academic literature related to Instagram, studies have indicated its effects on mental health (Zhao, Cingel, Xie, & Yu, 2023), its impact on self-presentation skills (Geary, March, & Grieve, 2021), concerns regarding privacy and confidentiality (Abril, Tyson, & Morefield, 2022; Choi & Sung, 2018), and research on social media addiction (Aparicio-Martinez, Ruiz-Rubio, Perea-Moreno, Martinez-Jimenez, Pagliari, Redel-Macias, & Vaquero-Abellan, 2020). Although the literature discusses education-oriented studies in the context of social media, it lacks a thorough analysis of the status of social media in educational studies. An in-depth analysis of studies on social media in the field of education contributes to the literature in identifying and illustrating its broad perspective.

## **Rationale and Research Questions**

Social media along with the other technologies have become widespread in every field of life going beyond acting as a mere socialization tool. Besides, there is an increasing trend to evaluate the influence of social media in educational sciences. Reviewing, examining, and assessing social media studies within educational sciences and presenting the current situation is believed to contribute to further research regarding social media. The evaluation of social media's influence on education is crucial, extending beyond individual interactions to encompass its effects on broader educational policies and practices within society. This research strives to offer a significant repository for researchers, educational institutions, and policymakers, consolidating the latest insights into the utilization of social media within the realm of educational sciences. This study offers researchers the opportunity to quickly understand and evaluate the existing knowledge about the use of social media in education. Moreover, it is anticipated that this study will illuminate forthcoming research endeavors aimed at enhancing the efficacy of social media in educational contexts. This study aims to bibliometrically examine the trends in the use of social media within educational studies published between 2017-2023. For this purpose, answers to the following questions were sought:

In the studies regarding the use of social media in educational research, how are the following items presented:

1. Years,
2. Research method,
3. Social media platforms (Facebook, Twitter, etc.),
4. Subject area,
5. Type of research,
6. Sample size,
7. Level of sampling (K-12, higher education, professional, lifelong learning),

8. Users (Who?/To whom?),
9. Content (What?),
10. Function (Why?),
11. Data analysis methods,
12. Data collection tools,
13. Type of hashtags,
14. Variables,
15. Keywords,
16. Countries,
17. Journal of publication.

## METHOD

### Research Design

This study examines the articles on social media within educational sciences published between 2017-2023 by bibliometric analysis method. The bibliometric analysis enables a statistical analysis of information such as author, country, citation, keyword, and journal of studies published in a certain field, database, or journal; the bibliometric data provides a general situation of a particular discipline (Al, 2008; Al & Costur, 2007). The researchers determined the inclusion and exclusion criteria for the selection of the articles and chose the database according to the scope of the study. Upon finalizing these steps, inquiries were started in line with the criteria. The results of the inquiry were investigated through content analysis of the articles and the analysis findings were organized. In addition to tables of content analysis, bibliometric visualizations produced from the bibliometric analyzes were included in the presentation of the findings. In the bibliometric visualization of the study, the researchers created the visuals by using the VOSviewer program.

### Sampling

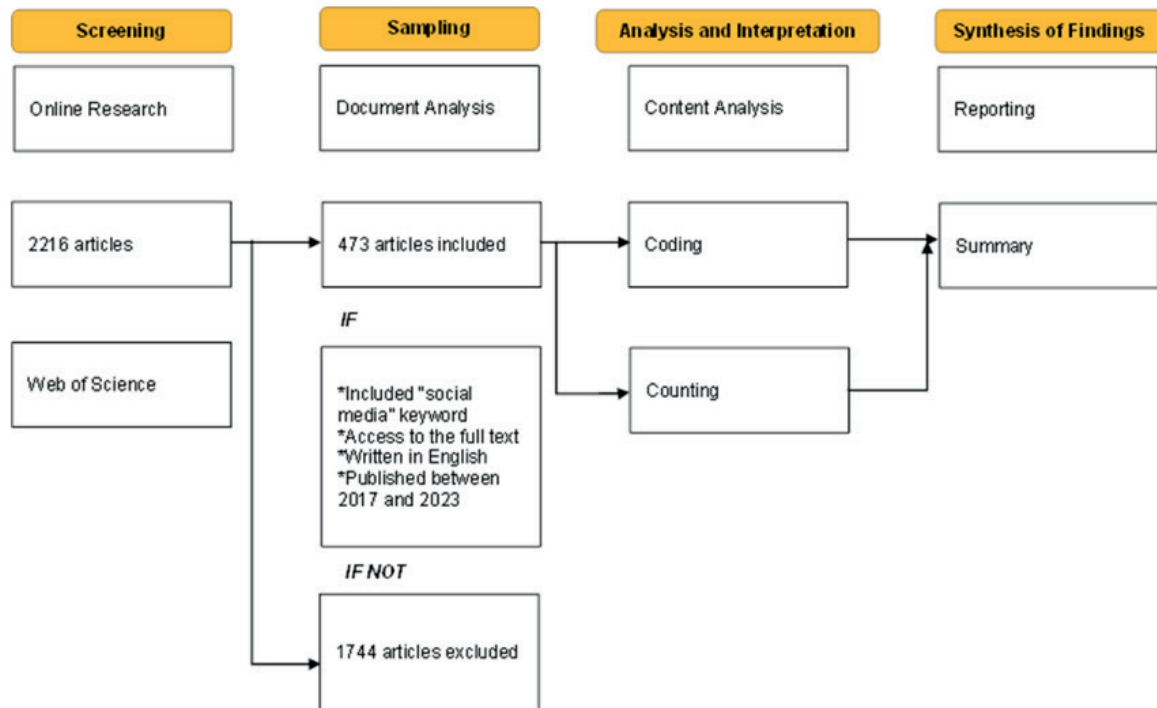
In line with the rationale of this research, open-access articles published between the years of 2017 and 2023 on the Web of Science (WoS) database were scanned on January 23, 2024, using the search query: [social media]. “Education Educational Research” was selected from the “Web of Science categories” drop-down menu to filter the query into the framework of studies focused on educational sciences. The reason for using Web of Science (WoS) in the research is that it is the world’s oldest and most widely used database in the world. After applying the filter and setting the search keyword, the result produced a list of 2216 studies.

### Inclusion/Exclusion Criteria

At the end of the review, the list was refined, and 473 studies were included in this study. Table 1 lists the inclusion and exclusion criteria.

**Table 1.** Inclusion and Exclusion Criteria for Sampling Selection

Inclusion Criteria	Exclusion Criteria
• With “social media” keyword	• Without “social media” keyword
• Access to the full-texts	• Access only to the abstracts
• Written in English	• Written not in English
• Published between 2017 and 2023	• Unavailable in the Web of Science database
• Under the category of “Education Educational Research”	• Not under the category of “Education Educational Research”



**Figure 1.** Research Design

The research design includes multiple steps and is displayed in Figure 1. It is adapted from Bozkurt et al. (2017).

### Reliability Analysis

To determine the reliability between coders, Fleiss Kappa’s reliability coefficient was taken as a basis. Coding was performed by five researchers using the Microsoft Office Excel program. Fleiss Kappa’s reliability was assessed based on studies published between 2017 and 2021, as the inclusion of research conducted in 2022 and 2023 occurred later in the study. For coding, 66 articles were chosen and it was ensured that each year was adequately represented in the selection of the articles. The distribution of articles published in different journals was also taken into consideration. Selected 66 articles were examined independently by five researchers and intercoder reliability was calculated using the Fleiss’ kappa formula. While Cohen’s kappa coefficient is used to calculate the reliability between two encoders, Fleiss’ kappa coefficient can be used to calculate the reliability of two or more coders (Fleiss, 1971). As a result of the first coding, the Fleiss kappa coefficient was determined as 0.66. The researchers revisited the steps to establish consensus by discussing the criteria for article classification and criteria for inclusion–exclusion. After reaching a consensus, the Fleiss kappa coefficient was calculated as 0.71. Landis and Koch (1977) state that a fit in the range of 0.61-0.80 is considered a significant fit. Therefore, the reliability between encoders can be accepted at a significant level.

### Classification

Twelve classifications were targeted in the study: subject area, article type, article method, data collection tool, sample level, sample size, sample selection method, data analysis method, users (‘who’/‘to whom’), content (‘what’), function (‘why’), and social media. While creating these classifications, the researchers reviewed the relevant literature and determined the most suitable classification to match the purpose of this study.

Subject area classification is constructed on the sub-categories developed by the Organisation for Economic Co-operation and Development (OECD, 2015). The type of articles examined was categorized by means of the “Educational Technologies Publication Classification Form” developed by Goktas et al. (2012). No reference was stated in the article method classification; subcategories of quantitative, qualitative, and

mixed were compiled by the researchers. The “Social Media Publication Classification Form” developed by Kadirhan et al. (2016) was adopted to classify the data collection tools. The classification form by Goktas et al. (2012) was applied to a group of the sample levels of the articles examined; social media users from the sub-categories were added to the classification form by Kadirhan et al. (2016). Goktas et al.’s (2012) classification form was applied for the sample size, and the researchers slightly adjusted it by adding the category “more than 1000+” due to the large number of data analyses in social media studies. The form by Kadirhan et al. (2016) was incorporated into the sample selection method, and the form by Goktas et al. (2012) was referred to in the data analysis method.

Social media taxonomy developed by Ouiridi, El Ouiridi, Segers & Henderickx (2014), inspired by Lasswellian coding categories, was employed to classify the articles in terms of users, content, function, and social media. According to this taxonomy, social media tools are organized according to users (‘who’/‘who’), content (‘what’), and functions (“why”). The subcategories of the user category are clustered as micro-meso-macro. The researchers incorporated Instagram and WeChat into the subcategories since they were missing from the list of social media platforms.

In addition to the classification criteria for the literature, the researchers added their sub-criteria. In this direction, the “unspecified” option was inserted into the sub-categories, especially for the articles that did not specify any of the classified sub-categories. At the same time, the “other” option has been included to choose different categories from the predetermined sub-categories.

## FINDINGS

This section presents findings related to social media within educational research in terms of their publication year, country, author, keywords, social media platform and hashtag. First, the distribution of the articles according to their year of research was examined to achieve the research objectives. Table 2 lists the articles by year.

**Table 2.** Analysis of Social Media Studies by Years

Research Year	n
2022	107
2021	98
2023	89
2019	65
2020	50
2018	32
2017	32
Total	473

Table 2 shows fluctuations in the number of studies over the years. This may be related to the additional features of social media technologies growing over the years and the rise in their educational uses. However, a decrease was observed during the emergency distance education period, which started in 2020 with the onset of the COVID-19 pandemic, followed by a significant increase in 2021. This might be due to the integration of social media platforms as a complementary tool to the distance education processes. Furthermore, it is evident that the majority of studies were published in 2022. This could be attributed to the ongoing research on online learning post-pandemic and the increasing prevalence of social media platforms in the education sector.

To meet the objectives of this study, research methods utilized in the social media articles are examined and results are given in Table 3.

**Table 3.** Analysis of Research Methods Used in the Social Media Studies

Research Method	n
Qualitative	162
Quantitative	120
Mixed (Quantitative-Qualitative)	76
Unspecified	115
Total	473

Table 3 demonstrates the high rate of the qualitative research method (n=162) in educational research on social media which is followed by quantitative research methods (n=120) and quantitative-qualitative mixed research methods (n=76) respectively. The number of studies that did not specify any research methods is found as 115. The qualitative research method is seen as the most preferred research method that might relate to the need for deep and comprehensive analysis of data about social media platforms.

In the next step, the social media platforms in the social media studies were explored and findings on their frequencies are listed in Table 4.

**Table 4.** Analysis of Social Media Platforms in the Social Media Studies

Social Media Platform	n
Facebook	146
Twitter	110
Instagram	68
YouTube	56
WhatsApp	34
WeChat	15
LinkedIn	10
TikTok	9
Other	90
Unspecified	53
Total	591

Table 4 shows that the most preferred platform is Facebook (n=146) followed by Twitter (n=110) and Instagram (n=68). While YouTube (n=56) and WhatsApp (n=34) follow these platforms, respectively, WeChat (n=15), LinkedIn (n=10), and TikTok (n=9) are realized as less integrated platforms. Ninety studies included other social media platforms and 53 studies did not give any specific information. Next, articles related to social media were surveyed according to their subject areas. Table 5 presents the findings as a comprehensive list.

**Table 5.** Analysis of Subject Area in the Social Media Studies

Subject Area	n
<b>Social Sciences</b>	
Educational Sciences	276
Media and Communication	11
Economics and Business	3
Political Science	2
Psychological Cognitive Sciences	2
Other Social Sciences	7
<b>Medicine and Health Sciences</b>	
Basic Medical Sciences	10
Clinical Medicine	4
Health Sciences	2
Other Medical Sciences	2
<b>Natural Sciences</b>	
Computer and Information Sciences	4
Mathematics	2
Biological Sciences	1
Physics	1
<b>Humanities and Art</b>	
Languages and Literature	10
Art	4
Other Humanities	4
<b>Engineering and Technology</b>	
Mechanical Engineering	1
Other Engineering	1
Architecture	1
<b>Agriculture and Veterinary Sciences</b>	
Agriculture, Forestry and Fisheries	1
Unspecified	124
Total	473

Data in Table 5 highlights Social Sciences (n=301) as the subject area investigated the most within the social media studies. The subject areas of Medicine and Health Sciences (n=18), Natural Sciences (n=8), Humanities and Arts (n=18), Engineering and Technology (n=3), and Agriculture and Veterinary Sciences (n=1) appear in the list respectively. According to the findings, educational sciences under social sciences stand out as the most prevailing concerning social media studies. This might be due to the selection of studies published in the “Education Educational Research” category in the database. In addition, the exploration of educational use of social media applications ranges from medicine and health education to engineering and agriculture. This shows the interdisciplinary nature of social media within educational studies.

Additionally, Table 6 presents information about the article types in the social media studies.



**Table 6.** Analysis of Article Types in the Social Media Studies

Article Types	n
Descriptive Study	67
Experimental Study	42
Methodological Study	18
Theoretical Study	17
Case Study	16
Action research	13
Exploratory Study	13
Evaluation Study	7
Literature Review	7
Professional Work	4
Design Based Research	3
Other	30
Unspecified	236
Total	473

According to Table 6, descriptive study (n=67), experimental study (n=42), and methodological study (n=18) are seen as the top three methods administered in social media studies. The number of unspecified methods (n=236) counts more than half of the total number of studies. Despite the stated research methods as qualitative, quantitative, or mixed design in the studies examined, the type of article is not always openly and directly expressed.

Next, the results from the analysis of sample sizes in the social media studies are displayed in Table 7.

**Table 7.** Analysis of Sample Size in the Social Media Studies

Sample Size	n
101-300	106
31-100	92
301-1000	85
11-30	66
1000+	61
1-10	42
Unspecified	21
Total	473

According to Table 7, the distribution of the studies underlines the sample size of 101-300 (n=106). Sample sizes vary from 31-100 (n=92) to 1000 and above (n=61); while 21 of the studies have not specified any. It is observed that the groups with too few or too many sample sizes are generally less favored. This might be attributed to the educational context of the studies and the laborious nature of accessing meaningful interaction due to the substantial number of users.

The next step of the research covers the sample levels of the articles related to social media. Table 8 demonstrates the results of this analysis.

**Table 8.** Analysis of Sample Level in the Social Media Studies

Sample Level	n
Undergraduate students	209
Teachers	60
Secondary school students (9-12)	44
Social Media Users	40
Graduate (Masters, Doctorate)	27
Instructors	26
Pre-School/Primary school students (1-8)	25
Parents	11
Youth and Adults	8
Students	5
Administrators	4
Other	36
Unspecified	33
Total	528

Table 8 shows that data were predominantly collected from the participants studying at the undergraduate level (n=209). The remaining sample groups include participants such as teachers (n=60), secondary school students (n=44), social media users (n=40), graduate students (n=27), and instructors (n=26). Overall, half of all studies were composed of undergraduate students as users. Sample group analysis at the K-12 level uncovers fewer studies at the primary education level than at the secondary education level, while there were also studies at the pre-school level. In addition, all involved in educational institutions are considered as participants in the analyzed studies.

Social media studies were then evaluated according to their users (who?/to whom?). Table 9 briefly shows the results about the users.

**Table 9.** Analysis of Users (Who?/To whom?) in the Social Media Studies

Users (Who?/To whom?)	n
Micro	211
Meso	142
Macro	105
Unspecified	15
Total	473

Table 9 demonstrates the portion of social media users in the studies on social media with predominance at the micro level (n=211) followed by meso (n=142), and macro level (n=105). Furthermore, eleven studies did not specify the users (n=15). This study classifies micro-level user profiles recognized with a class or a small number of groups considered as participants. While the studies carried out with the participants at the faculty or campus have a meso-level user profile, those reaching all the users across the country or in a wider network are defined as the macro-level user profile.

In the next step of this study, the content (what?) of the social media studies is examined and presented in Table 10.

**Table 10.** Analysis of Content (What?) in the Social Media Studies

Content (What?)	n
Multimedia	144
Text	66
Video	29
Visual	10
Other	4
Unspecified	220
Total	473

Consistent with Table 10, educational content covers multimedia (n=144), text (n=66), video (n=29), and visual (n=10) content in addition to ‘other’ (n=4) and ‘unspecified’ (n=220) content. Multimedia integrates two or more types of content such as pictures (photos, graphics, maps), text, audio, and video, and remains indispensable to learning activities (Mayer, 2005). The multimedia content provides interactive support to the student such as reviewing the material, pausing, recording voice, and making graphical visualizations. These features play a role in the selection of social media platforms that offer multimedia such as text, pictures and sound as seen in Facebook user preference.

As a next step, functions (why?) in the social media studies were scanned and the results are shared in Table 11.

**Table 11.** Analysis of Function (Why?) in the Social Media Studies

Function (Why?)	n
Sharing	127
Multiple causes	116
Networking	22
Data collection	10
Collaboration	8
Other	25
Unspecified	165
Total	473

Table 11 features the function of having multiple causes (n=116), sharing (n=127), networking (n=22), data collection (n=10), and collaboration (n=8), while many of the studies (n=164) did not specify their function. Multiple-cause functions may prevail since social media offers numerous functions that can be adaptable to educational contexts.

Additionally, this study explores the data analysis methods of the articles related to social media; Table 12 lists these methods.

**Table 12.** Analysis of Data Analysis Methods in the Social Media Studies

Data Analysis Method	n
Qualitative Data Analysis (Content Analysis/Descriptive Analysis/Thematic Analysis/Other)	157
Predictive Analytics (T-test /Structural Equation Modeling/ Regression /Correlation/ Factor Analysis/ANOVA-ANCOVA)	154
Descriptive Statistics (Frequency/Percentage/Chart/ Graphics /Average/Standard Deviation)	150
Non-Parametric Tests	23
Bibliometric Analysis Cluster Analysis/Text Mining/Social Network Analysis	15
Other	19
Unspecified	64
Total	582

Data analysis methods applied in the social media studies listed in Table 12 exhibit a high rate of qualitative data analysis (n=157) followed by methods such as predictive statistics (n=154), descriptive statistics (n=150), and non-parametric tests (n=23). Furthermore, the number of studies that did not indicate the data analysis method totals 64.

The following step of the research design covers data collection tools in social media studies. Table 13 presents the list of these tools.

**Table 13.** Analysis of Data Analysis Tools in the Social Media Studies

Data Collection Tool	n
Questionnaires	225
Interviews	127
Time and Motion Logs	30
Social Media Tools	25
Scales	24
Observation forms	20
API (Data extraction application)	15
Performance Tests	11
Anecdote Records	5
E-portfolios	1
Other	73
Unspecified	15
Total	571

According to the data in Table 13, the allocation of data collection tools marks the questionnaire (n=225) as the most preferred data collection tool. The second most employed data collection tool is the interviews (n=127) which are commonly seen in qualitative studies. This finding supports the data about the complementary nature of data analysis methods and tools observed in this study. Data collection tools cover time and motion

logs (n=30), social media tools (n=25), scales (n=24), observation forms (n=20), API (n=15), performance tests (n=11), anecdote records (n=5), e-portfolios (n=1), in addition to 'other' (n=73) data collection tools. In 15 studies, no data collection tool was specified.

As one of the final steps, hashtags in social media studies are examined and the log of hashtags is displayed in the following table.

**Table 14.** Analysis of Hashtags in the Social Media Studies

Categories	Hashtag	n
About COVID-19 Pandemic	COVID19	1
	WuhanVirus	1
	coronavirus	1
	CoronaOutbreak	1
	2019nCoV	1
	COVID-19	1
	CoronavirusPandemic	1
	korona	1
	evdekal	1
	COVID19	1
	HealtyKidsQuarantined	1
About Teaching and Learning	digital teaching	1
	edtech	1
	highered	1
	elearning	1
	booktok	1
	bookstagram	1
	Studygram	1
	Studygrammer	1
	remotelearning	1
	remoteteaching	1
	Remoteteaching	1
	wedontdistanceeducation	1
	newteachertribe	1
About Chat	EdChat	2
	MedEdChat	1
	chat	1
	CdnELTchat	1
	NGSSchat	1
	pechat	1
	Other	41
Unspecified	423	
	Total	442

Table 14 shows that the hashtags are presented under three main categories according to their scope. These are those related to the Covid-19 pandemic (n=11), teaching and learning (n=13), and chat (n=7). Those not included in these themes are in the other category (n=41). Additionally, it was observed that hashtags were not used in 423 studies.

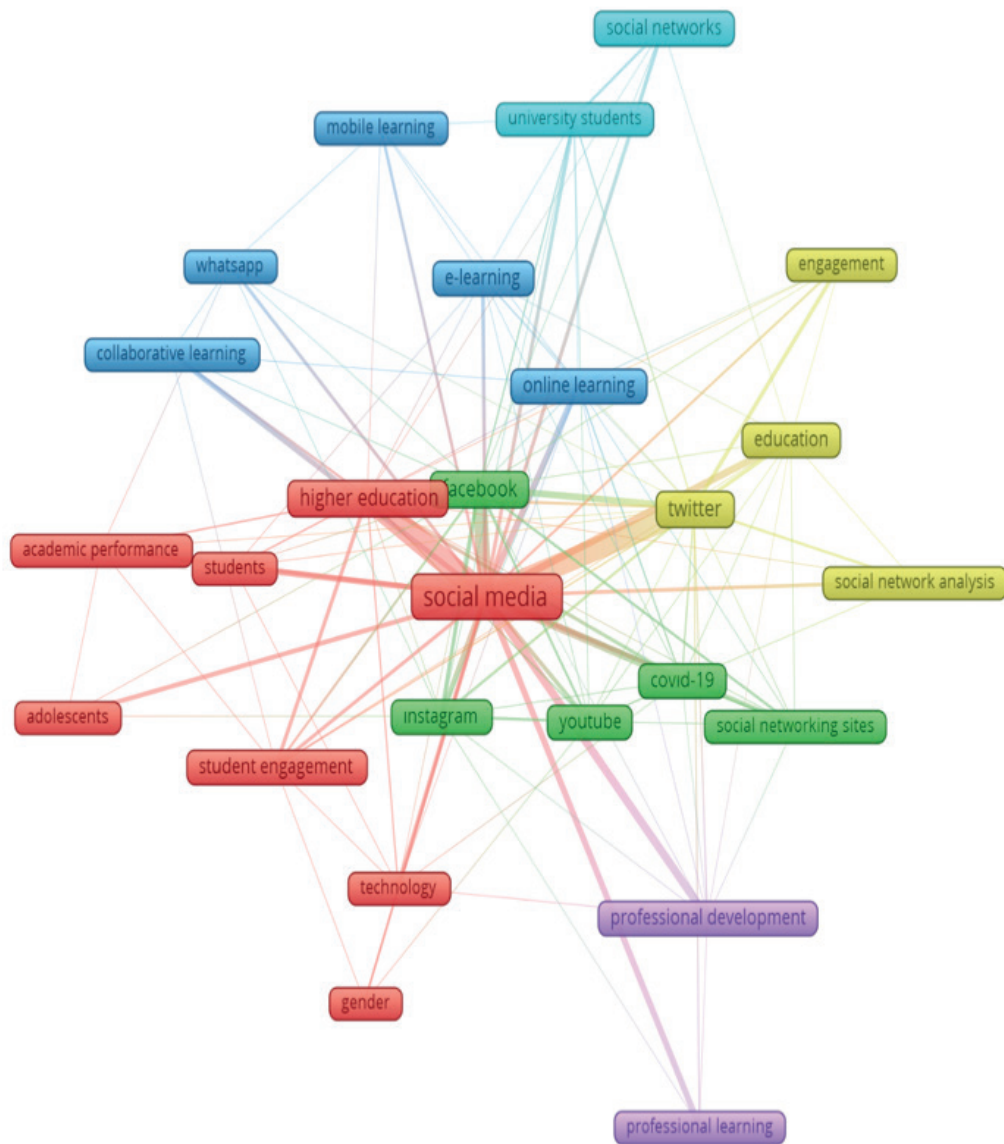
In the tabulated data set, Table 15 displays the results of the examination of social media studies according to the various variables.

**Table 15.** Analysis of Variables in the Social Media Studies

Variable	n
Perception	28
Social media use	28
Student participation	16
Gender/Age	15
Academic Performance	14
Interaction	13
Motivation	13
Attitude	12
Experience	10
Social media platform	5
Satisfaction	5
Other	111
Unspecified	314
Total	584

Table 15 shows a diverse list of variables including perception (n=28), social media use (n=28), student participation (n=16), gender/age (n=15), interaction (n=13), and motivation (n=13). The number of studies without any specified variable remains high (n=313) which can be associated with the level of researchers' competence or their command to indirectly present the variables to remove the potential obstacles during the data collection phase. It is seen that affective characteristics such as self-efficacy perception, self-esteem, awareness, anxiety, and interest, as well as social support features of social media such as support and cooperation, and risky aspects such as addiction, are also examined in educational research. However, these are categorized as 'other' and are less frequently studied.

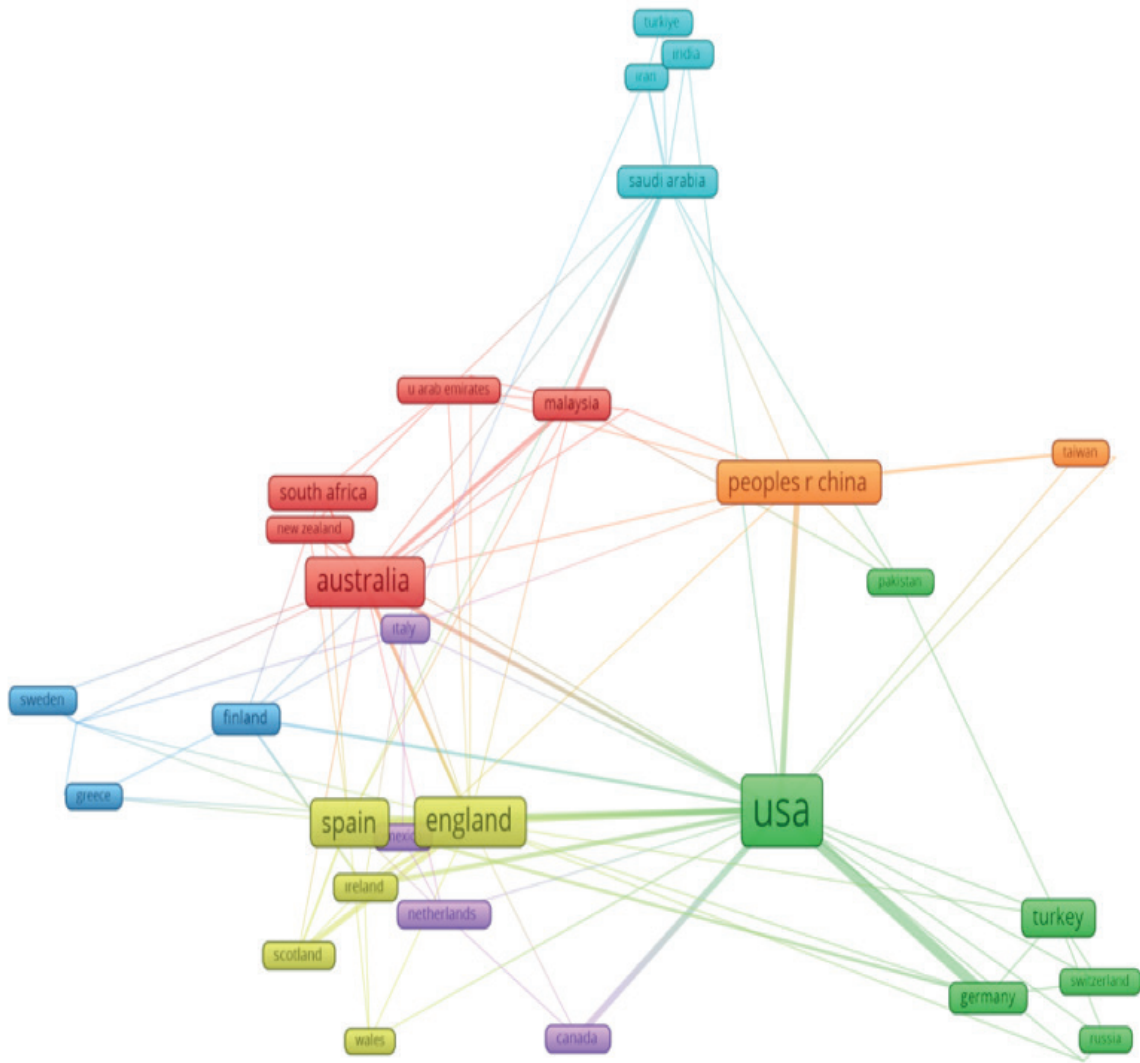
The findings of this study are also presented in the form of visualization. This figure visualizes the keywords listed in social media studies within the educational context. The findings about the keywords are presented in Figure 2.



**Figure 2.** Analysis of Social Media Studies According to the Keywords

Figure 2 shows the most frequently repeated keywords as follows; social media, higher education, Twitter, Facebook, and COVID-19. The significant presence of Twitter and Facebook tools in keywords supports the finding of the most favored social media tools in studies. In addition, the profusion of studies conducted during the COVID-19 global epidemic period may rationalize the exhaustive use of the COVID-19 keyword. The higher education keyword indicates the educational use of social media in higher education; while the keywords professional education, professional development, and teacher professional development confirm the high volume of work about the use of social media in professional and vocational education.

As another point of analysis, social media studies are examined in terms of the countries where they were published. The findings are illustrated in Figure 3.



**Figure 3.** Analysis of the Social Media Studies According to Country of Publication

Figure 3 displays the concentration of studies published in the U.S.A., Australia, Turkiye, South Africa, Germany, and Sweden, respectively.

In the last tabulated data set, Table 16 displays the results of the examination of social media studies according to the journal of publication.

**Table 16.** Analysis of the Social Media Studies According to the Journal of Publication

Education and Information Technologies	25
International Journal of Emerging Technologies in Learning	24
Education Sciences	18
Frontiers in Education	16
Cogent Education	12
Australasian Journal of Educational Technology	11
Journal of Information Technology Education-Research	11
BMC Medical Education	10



Computers & Education	10
Learning Media and Technology	10
International Journal of Educational Technology in Higher Education	8
International Journal of Instruction	8
Online Learning	8
International Journal of Information and Communication Technology	7
Research in Learning Technology	7
Other	288
Total	473

The data in Table 16 highlight studies published in Education and Information Technologies (n=25) that could be related to the high number of studies using social media in education and education technologies. Moreover, International Journal of Emerging Technologies in Learning (n=24), Education Sciences (n=18), Frontiers in Education (n=16), Cogent Education (n=12), Australasian Journal of Educational Technology (n=11), Journal of Information Technology Education-Research (n=11) journals are seen to focus their publication on social media. Finally, the number of journals included in the scope of the study counts as 190. Journals with six or fewer repetitions are presented under the ‘other’ category.

## DISCUSSIONS AND CONCLUSION

Social media not only functions as a communication network but also serves as a platform in many areas ranging from government institutions to media organizations, from educational environments to academic research. This study investigates academic studies on the use of social media in the field of education grounded on the framework of bibliometric analysis. In the study, full texts of 473 articles on the use of social media in educational research in the Web of Science database between 2017-2023 were investigated by means of the content analysis method. According to the findings, it can be established that studies on social media in educational research between 2017 and 2023 with peak in 2022. Student views on the use of social media in educational processes confirm its recognition over the years (Togay, Akdur, Yetisken, & Bilici, 2013). In this context, the findings from this study are seen as compatible with the literature on social media use.

It is obvious that Facebook and Twitter have millions of visitors every day and according to We are Social’s “Digital 2024 Global Overview Report”, Facebook, YouTube, WhatsApp, Instagram, and TikTok rank high in the list of social media tools in 2024; while Twitter is placed 12th. In this study, Twitter seems to be a popular platform that might relate to hashtag identification in many social media studies. The widespread use of these platforms can be disclosed as the defining feature of their incorporation into educational environments. Although TikTok is quite popular, it is seen that its frequency is less among the social media tools used in studies. The reason for this can be shown as the increase in TikTok users starting from 2021 (Pew Research Center, 2024).

Social media studies were then evaluated according to their users (who?/to whom?), content (what?), and functions (why?). According to the findings, more than half of all studies are established at the micro level; basically, they were chosen from a narrow area such as class, school, or a family. The study seems to have been conducted with macro-level participants. Considering the wide-reaching accessibility of social networks to users, the number of studies at the macro level appears remarkably low. This could be connected to educational research where users cooperate for a purpose through social media in educational environments. Besides, the popularity of sharing functions is noticeable; these social media platforms allow seamless interaction by exchanging within the network.

As a powerful data collection tool, surveys quickly collect data from large numbers of samples that fit the nature of social media environments where current discussions and situations are consumed rapidly. It is noteworthy to recognize that traditional data collection tools such as questionnaires and surveys are favored in such environments. Online data collection allows gathering data fast and affordable from different

geographical areas and much larger groups compared to other data collection techniques (Wolf, 1988); however, its convenience might cause overuse. Moreover, the result suggests that the sample sizes in the studies maximizing 101-300 support this situation. Time and motion records are defined as reporting tools of what is observed and when it is observed (Fraenkel, Wallen, & Hyun, 2012). Time and motion logs (n=30) are recognized as prevalent in this study. The inclusion and reporting of records in social media environments with these tools may explain the abundance of research findings. Despite this, applications using Application Programming Interface (API) as a data collection tool are scarce. Regarding the considerable size of data in data extraction from social media tools, platforms limit the data capacity that can be requested via API (Thomson, 2016). It is believed that this situation may adversely affect the adoption of APIs in research. All in all, a great deal of diversity is noticed in the context of the data collection tools that can be associated with the current advancements in online data collection tools.

Hashtags, which are one of the ways to interact on social media, are mostly on the themes of the COVID-19 pandemic, teaching and learning, and chat. It is seen that there are hashtags related to COVID-19 due to the fact that the articles examined were studied during the pandemic period and the way of teaching changed. It is also noteworthy that social media communities are used in hashtags related to teaching and learning. Bookstagram is a tag used by users who share the books they read, write short reviews of these books, and make videos about the books. Studygram is a community where students support each other on multiple social media tools. It allows students to come together under a hashtag for purposes such as providing motivation, offering tips for effective studies, sharing study moments, and passion for stationery. This is an indication that students use social media to get support for different aspects of self-education, even without the guidance of a teacher.

Moreover, studies on social media in the field of education are found to concentrate on data from undergraduate students. This supports the findings on sample levels and prominent levels of keywords such as “higher education”. It is recommended that future research focus on social media use by adults and parents since the available literature lacks sufficient data on these users.

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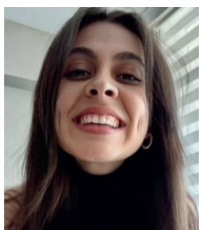
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