

Social Media in Education: Trends, Roles, Challenges, and Opportunities for Digital-Native Generations – A Systematic Literature Review

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Abstract: Social media has emerged as a potent facilitator of educational engagement, promoting interaction, dissemination of information, and collaborative efforts. This study uses bibliometric analysis within PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) guidelines to examine social media's educational impact, focusing on utilization trends and identifying challenges and opportunities for pedagogical integration. With 60.6% of the global populace active on social media platforms for over two hours daily, its significance in education, particularly among digital natives, is underscored. Platforms like Facebook, WhatsApp, Instagram, TikTok, and YouTube are highlighted for their educational potential. The research stresses the importance of responsible usage, digital literacy, and parental oversight to address associated risks like addiction, privacy breaches, identity theft, exposure to unsuitable content, and cyberbullying. It posits social media's capacity to revolutionize educational experiences, emphasizing the need for its strategic inclusion in teaching methodologies. The study suggests that future research will guide educators and students in effective social media integration at various educational levels. This work provides valuable insights for educators, policymakers, and scholars, contributing to the ongoing discourse on the role of social media in education. It emphasizes the importance of informed and effective pedagogical practices.

Keywords: Adoption in education, Educational technology, Quality education, Social media platforms, Systematic literature review

1. Introduction

In globalization, education is paramount to societal advancement and national progress, underscored by the integration of technological devices in educational development (Hsieh, 2020; Lytras et al., 2020). These include learning management systems (LMS), video-assisted learning, learning analytics, gamification (Fitriyanti et al., 2023; Tan et al., 2023; Zainudin et al., 2023), immersive technologies (augmented reality, virtual reality)(Criollo-C et al., 2024), blockchain (Samala, Mhlanga, et al., 2024), artificial intelligence (Samala, Sokolova, et al., 2024; Samala, Zhai, et al., 2024), microlearning (Ansori et al., 2024; Samala, Bojic, Bekiroğlu et al., 2023), and social media (Prasetya et al., 2023; Samala & Amanda, 2023; Yusmaningsih et al., 2024). Integrating social media into education represents a significant, transformative trend, redefining traditional learning boundaries as educators and institutions acknowledge its potential to enrich educational experiences (Abad-Segura et al., 2020). This paradigm shift has facilitated innovative pedagogical strategies, interactive learning environments, and new collaboration avenues (Tomczyk, 2021).

Employing social media in education holds substantial potential to enhance student interaction and collaborative learning, yet the degree of its positive impact on educational processes warrants further investigation (Aichner et al., 2021; Sanwal et al., 2023). Three years ago, in 2021, social media emerged as a crucial tool for online learning during the COVID-19 pandemic. The education sector continues to adapt to digital transformation (Ghosh et al., 2023). Integrating social media into education is intriguing due to its capacity for fostering engagement and interaction. The pervasive high-attachment, demand-oriented learning is a social process that prompts active student participation. Social media is an online platform where individuals actively seek information and share examples of their work based on common interests. Presently, both the young and elderly devote significant time to accessing social media, with 60.6% of the global population being active users, as indicated in Figure 1. Social media is extensively utilized as a communication tool for interaction and entertainment (Kemp, 2023; Sanwal et al., 2023).

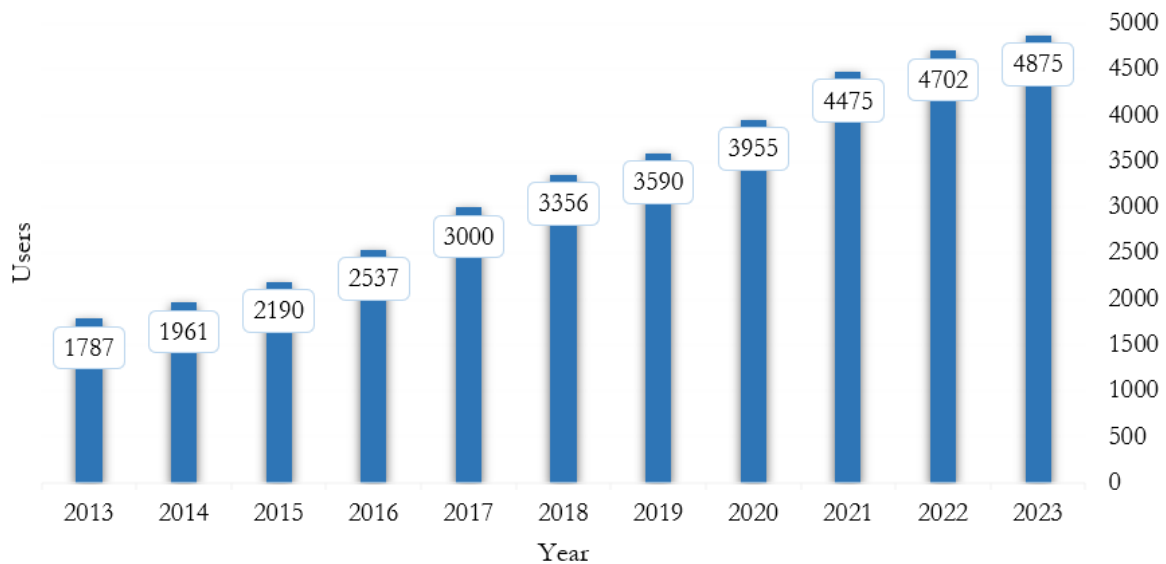


Fig. 1 Number of social media user identities (in millions)

Integrating social media into education marks a fundamental change in knowledge access, sharing, and co-creation. Platforms like YouTube, Twitter (now X), Instagram, LinkedIn, and TikTok go beyond their original roles for personal communication and entertainment (Lipschultz, 2020). These spaces enable educators and students to discuss, share resources, display achievements, and partake in broader intellectual conversations (Carpenter et al., 2021). Social media eliminates constraints of space and time.

Moreover, incorporating social media in education extends beyond higher education, reaching primary and secondary levels. Educators across all tiers utilize these platforms for interactive assignments, resource sharing, and forming virtual communities of practice. Social media tools offer various educational benefits, such as fostering connection and social cohesion, collaborative knowledge discovery and sharing, content creation and knowledge acquisition, information gathering, and content modification. The possibilities encompass live Q&A sessions, virtual field trips, collaborative projects, and even assignments designed for Instagram appeal, prompting students to connect coursework with real-world scenarios (Černá & Borkovcová, 2023; Hamadi et al., 2021). The transformative shift towards social media integration in education comes with challenges related to online safety, digital literacy, and potential distraction, requiring a nuanced and responsible approach.

In the current era of digital dominance and rapid change, a thorough understanding of social media's role in education can yield valuable insights and extensive benefits (Knox, 2023). Despite the evident prevalence of these platforms in daily life, a lack of research focused on their integration in educational settings, emphasizing the urgent need for detailed and impactful research in this domain. This research aims to fill the knowledge gap, providing fresh perspectives on the trends, consequences, challenges, and opportunities of incorporating social media into education. Preliminary studies suggest positive impacts, including increased learning motivation, student engagement, and the formation of inclusive learning communities (Manca, 2020). Nevertheless, some findings indicate potential risks, such as disrupting learning focus, privacy concerns, and spreading inaccurate information.

This research seeks to explore the transformative potential of emerging trends by analyzing case studies, curating best practices, and understanding paradigm shifts in education. The inclusion of social media in educational frameworks highlights the adaptability of teaching paradigms beyond traditional classrooms, extending into dynamic digital spaces (Wimpenny et al., 2022). Systematic research is crucial for a comprehensive understanding of the impact of social media use in education. Consequently, this study aims to conduct a systematic review of current literature addressing the integration of social media in educational contexts.

This research aims to comprehensively understand the benefits, challenges, and opportunities of integrating social media into education through in-depth analysis. Utilizing a comprehensive and innovative methodology, the research integrates bibliometric analysis with advanced data analysis and visualization tools, such as R-Studio, VOSviewer, Python, and MS Excel. Using bibliometric analysis helps identify critical trends, frequently discussed topics, and relationships between concepts in scientific literature. R-Studio and Python are pivotal for data processing, keyword frequency calculation, and detecting temporal changes.

VOSviewer translated these insights into network visualizations and cluster maps, offering an intuitive overview of the literature structure and the contributions of different concepts. Following the PRISMA review approach ensures a systematic and comprehensive literature review design, minimizing bias in literature selection and delineating clear stages in data search, inclusion, and analysis. The research explores social media adoption trends in education over the last decade, along with challenges, opportunities, implications, and recommendations. Key research questions include:

- RQ1. How have social media platform trends evolved in education over the last ten years (2014 to 2023)?
- RQ2. What are the opportunities and challenges of adopting social media for education?
- RQ3. What are the implications and recommendations for using social media for education?

2. Review Methodology

This study employs the PRISMA method and bibliometric analysis, ensuring a methodologically sound approach. PRISMA, recognized for its meticulous guidelines, guides the systematic literature review and meta-analysis (Page et al., 2021). Software tools like R Studio, VOSViewer, Python, and MS Excel facilitate intuitive data analysis and visualization. Following the steps outlined by PRISMA, including literature search, study selection, data extraction, and synthesis (Page et al., 2021), the study aimed to minimize bias and enhance the reliability of its findings. This approach upheld the highest standards, providing accurate insights into literature analysis and trends

related to social media use in education. Figure 2 illustrates the flow diagram and procedural steps of the review process.

This research followed a systematic series of methodological steps. Keyword-based searches, including terms like "Social Media," "Education," "Learning," and specific platforms such as "YouTube," "Instagram," "TikTok," "WhatsApp," and "Facebook," yielded 419 initial documents. After removing duplicates, 326 relevant documents were retained through meticulous screening, focusing on articles and proceedings from the past decade to align with recent advancements. The subsequent phase involved an in-depth evaluation based on document titles and abstracts. Each document was carefully assessed to eliminate unsuitable ones, such as non-English documents, irrelevant titles, and topics unrelated to the adoption of social media in education. This refined the data to 89 final documents selected for relevance and high quality.

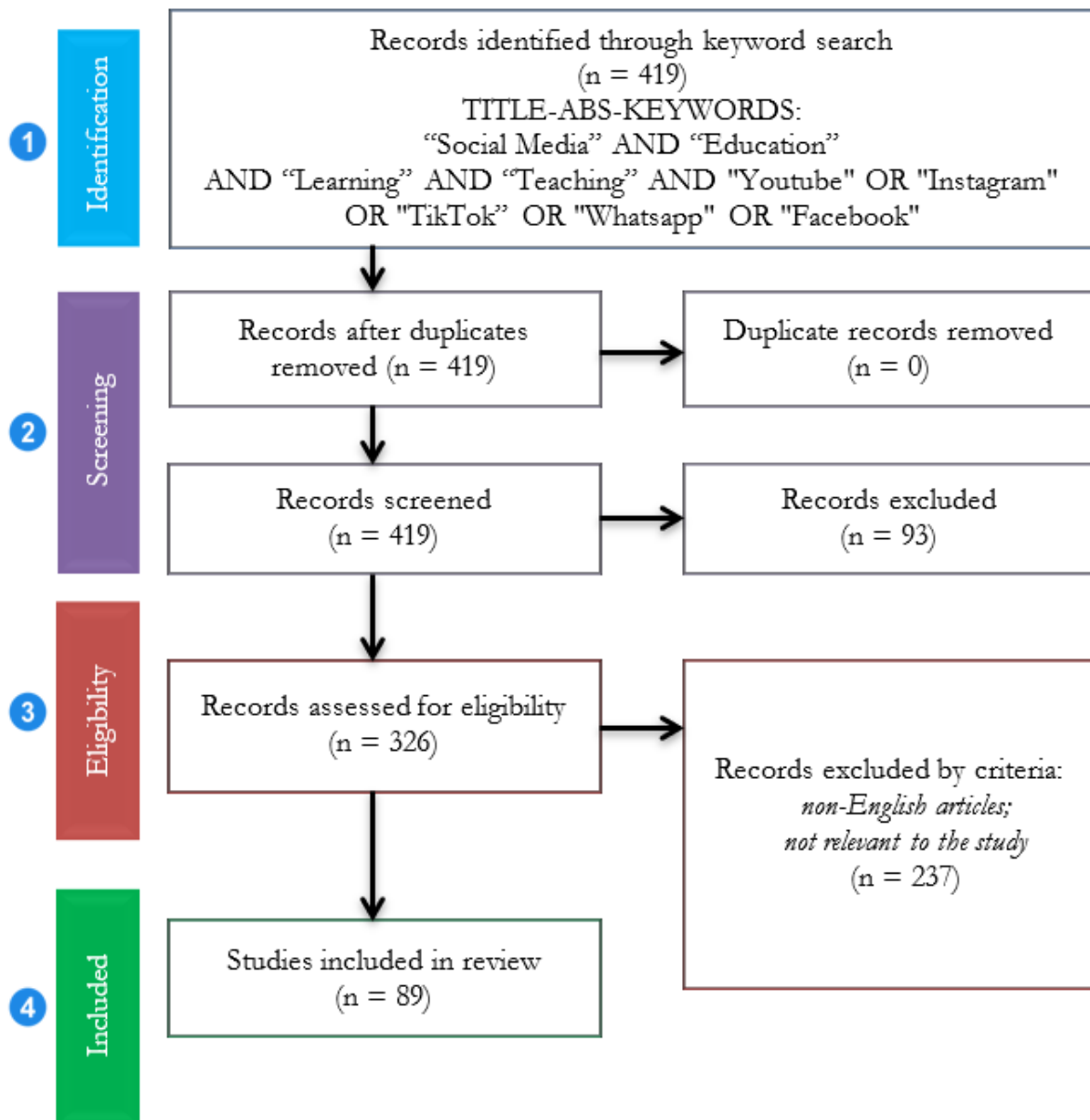


Fig. 2 PRISMA flow diagram

The final datasets were created for visualization, interpretation, analysis, and synthesis. Trends, challenges, opportunities, implications, and recommendations for integrating social media into

education were scrutinized. This approach ensured that the research results were based on precise, pertinent, and reliable data (Samala et al., 2023).

3. Findings and Discussions

The collected data were organized into a comprehensive and well-structured metadata collection, vital for systematic reviews and bibliometric analyses. This metadata, offering descriptive information, enhances understanding, management, and practical data analysis. Complete and accurate metadata ensures data reliability, transparency, and efficiency in systematic and bibliometric analyses. Utilizing the Scopus database, renowned for its global impact factor, as the primary data source ensures data reliability for systematic reviews and bibliometric analyses. Scopus is one of the largest and most reliable scientific literature databases globally. Journals indexed by Scopus undergo a rigorous peer review process, ensuring the quality of available publications. The multidisciplinary nature of Scopus-indexed journals enables researchers to gain comprehensive insights into their areas of interest. Additionally, Scopus provides robust bibliometric analysis tools for calculating journal impact factors, conducting citation analysis, and monitoring research trends and performance. The results of metadata completeness in our dataset are presented in Table 1.

Table 1: Completeness of Bibliographic Metadata

Metadata	Description	Missing Counts	Missing %	Status
AB	Abstract	0	0.00	Excellent
AU	Author	0	0.00	Excellent
DT	Document Type	0	0.00	Excellent
SO	Journal	0	0.00	Excellent
LA	Language	0	0.00	Excellent
PY	Publication Year	0	0.00	Excellent
TI	Title	0	0.00	Excellent
TC	Total Citation	0	0.00	Excellent
C1	Affiliation	1	1.12	Good
CR	Cited References	2	2.25	Good
DE	Keywords	5	5.62	Good
DI	DOI	19	21.35	Poor
RP	Corresponding Author	32	35.96	Poor
ID	Keywords Plus	42	47.19	Poor
NR	Number of Cited References	89	100.00	Completely missing
WC	Science Categories	89	100.00	Completely missing

While most metadata demonstrates high information completeness, specific fields, notably DOI, corresponding author information, and precise keyword and cited reference details, exhibit lower completeness. Notably, attention is required for data gaps in "Number of Cited References" and "Science Categories." Additional manual searches were conducted in the bibliometric analysis to address this, supplementing 19 missing articles' DOIs within the metadata. The bibliometric study excluded RP, ID, NR, and WC. Figure 3 depicts the core information from the dataset.



Fig. 3 Main information

A search on the Scopus database yielded 10,036 articles using the keywords "Social" AND "Media" OR "Education" OR "Learning." Filtering for 2014–2023 and the social sciences subject area narrowed it to 3,939 articles. After evaluating the relevance to the research questions, 419 articles met the criteria. From the 419 articles, after a thorough review and metadata extraction, 89 articles, along with the ten most cited documents on social media for education, were obtained. Table 2 presents a visualization of the results of the most cited social media publications for education in the Scopus database.

Table 2: Top Ten Most Cited Documents in Social Media for Education

Author Reference	Region	Journal & Publisher	Citations by Scopus	Global Citation
(Greenhow & Lewin, 2016)	United States	Learning, Media and Technology (Taylor & Francis Online)	333	868
(Abbas et al., 2019)	China	Sustainability (MDPI)	266	536
(Ansari & Khan, 2020)	India	Smart Learning Environments (Springer Open)	162	478
(Sobaih et al., 2020)	Saudi Arabia	Sustainability (MDPI)	162	385
(Chawinga, 2017)	Malawi	International Journal of Educational Technology in Higher Education (Springer Open)	157	416
(Goodyear et al., 2014)	United Kingdom	Sport, Education, and Society (Taylor & Francis Online)	109	250
(Al-Rahmi et al., 2014)	Malaysia	Asian Social Science (Canadian Center of Science and Education)	103	264
(Van Den Beemt et al., 2020)	Netherlands	Technology, Pedagogy, and Education (Taylor & Francis Online)	86	194
(Alamri et al., 2020)	Saudi Arabia	Sustainability (MDPI)	82	123
(Al-Rahmi et al., 2015)	Malaysia	International Review of Research in Open and Distance Learning	82	222

Firstly, a highly cited study Greenhow & Lewin (2016) reviews social media's role in education, emphasizing informal and formal learning, student engagement, and the use of social networking sites in institutional settings. In the second position, Abbas et al., (2019) highlight the positive impacts of social media on university students, such as raising awareness and enhancing social and communication skills. However, negative impacts include a lack of critical thinking and excessive time consumption. This study emphasizes the need for a balanced approach to using social media in education. According to Ansari & Khan (2020), social media significantly influences collaborative learning by fostering interactivity between teachers and students, promoting creative and dynamic collaboration. While these findings highlight the substantial impact of social media on education, further exploration is necessary to understand the opportunities and challenges posed by these platforms as learning resources, aiming to enhance future engagement between teachers and students.

3.1 Trends in Social Media Adoption in Education Over the Last Ten Years

Drawing upon a dataset comprising 89 documents obtained from 84 distinct publishing sources spanning the years 2014 to 2023, the research collected titles, abstracts, and keywords specifically

relevant to the adoption of social media in education. The distribution of documents per year is visually represented in Figure 4.

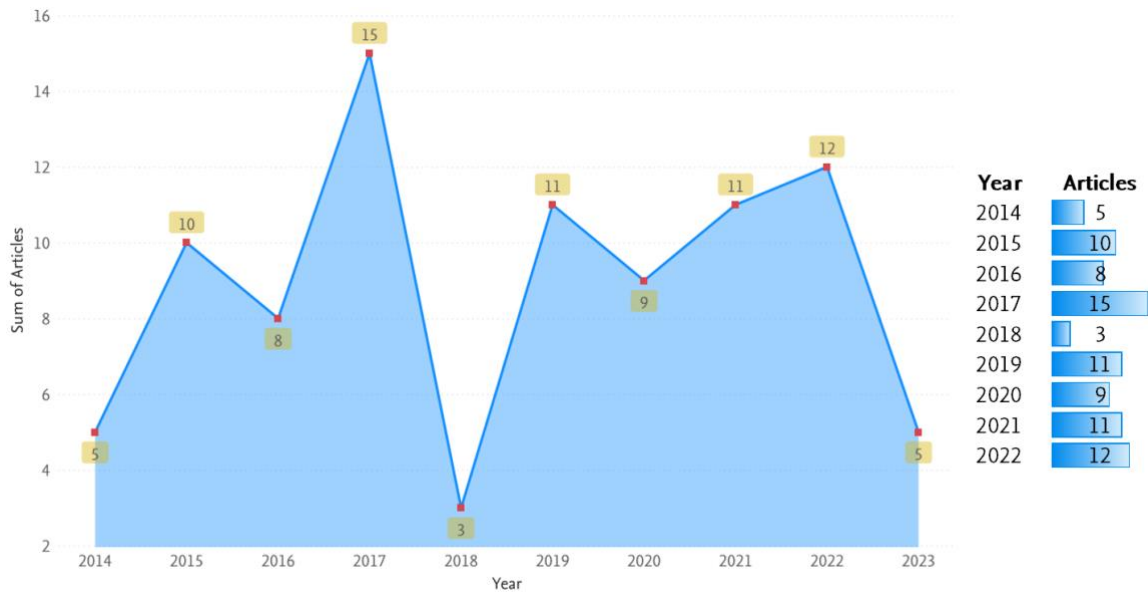


Fig. 4 Main information trends in social media

Figure 4 displays the trend of social media adoption in education from 2014 to 2023. There are various published articles each year, notably increasing from 2018 to 2019 and consistently high in 2020, 2021, and 2022. This data correlates intriguingly with the COVID-19 pandemic. The surge in social media adoption during these years might be a response to the pandemic. Faced with physical limitations and the shift to remote learning, educational institutions and individuals increasingly use social media for educational purposes. Platforms like video conferencing, collaborative tools, and social networks play a vital role in maintaining connectivity and sharing information and learning resources (Hurst, 2020). Social media environments, known for quick ideas and information sharing, effectively reach users in business, research, and education (Hruska & Maresova, 2020). The widespread use of social media in education has transformed the learning paradigm, making these platforms the primary means of interaction and understanding amid the challenges posed by the pandemic.

The co-occurrence of terms and keywords, denoting a relationship between specific terms, is evident in the paper's data analysis (Grames et al., 2019). The analysis identifies prevalent word patterns within the context of social media adoption in education. The phrase "social media" is a primary focus, occurring 62 times, underscoring its significance in modern learning. Notably, "Facebook" appears 20 times, signifying its substantial influence on education. Additionally, platforms like "Twitter," "WhatsApp," and "Instagram" are mentioned, showcasing the variety of platforms employed in education. The presence of words such as "higher education," "university," and "student" highlights the relevance of social media in higher education.

Terms like "e-learning," "distance learning," and "online learning" highlight social media's role in facilitating remote and e-learning. The presence of words such as "students," "student engagement," and "motivation" underscores social media's contribution to enhancing student engagement and motivation. Social media adoption is observed in specialized educational fields like "medical education," "engineering education," "dentistry," and "nursing." The terms "social learning theory" and "social media adoption" suggest applying social learning theory in using social media for education. Lastly, "mobile learning" and "mobile technology" indicate incorporating mobile technology in teaching and learning. Overall, this data reflects how social media has transformed knowledge dynamics, especially in the era of technology and distance education.

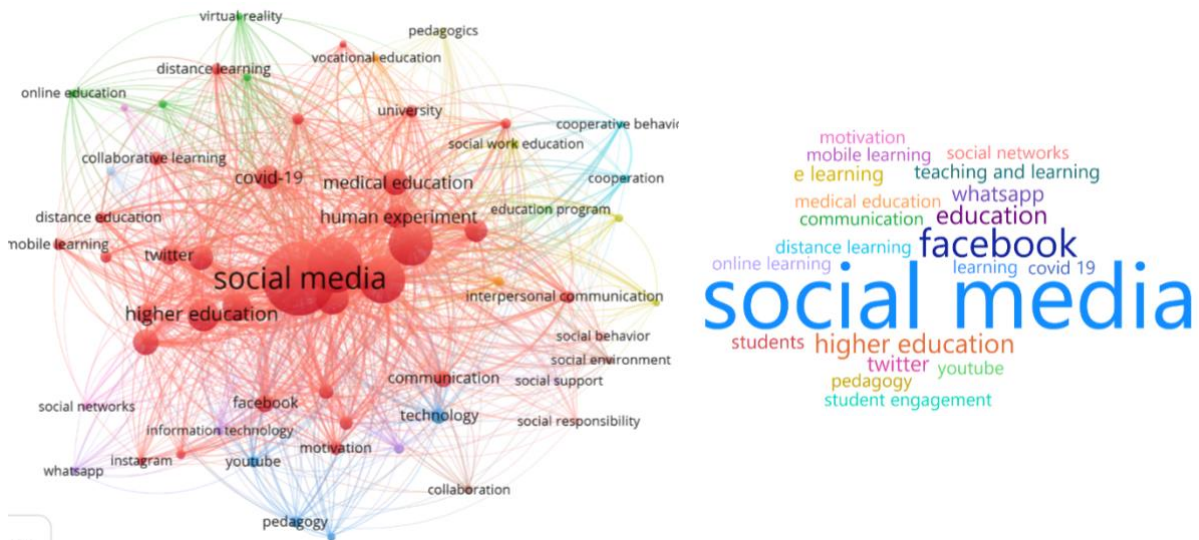


Fig. 5 Visualization of network and word cloud for terms and keywords co-occurrence

Facebook, Twitter, WhatsApp, and Instagram are widely used in education due to affordability, manageability, and user-friendliness (Trivedi et al., 2022). Users' selection of these platforms is influenced by various factors, as depicted in Figure 6, including:

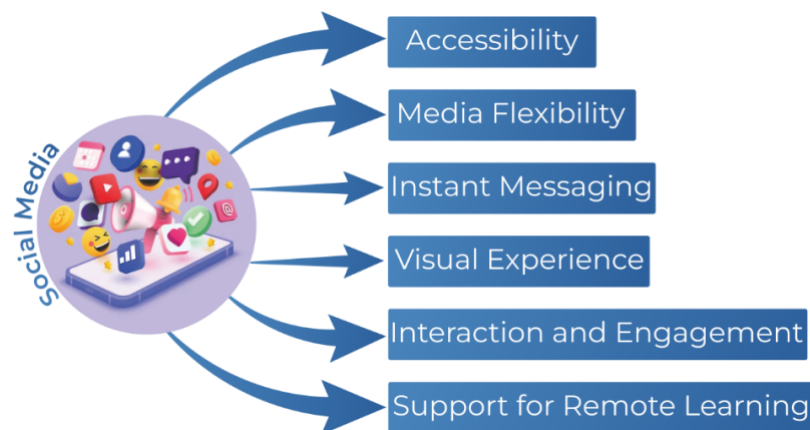


Fig. 6 Visualisation of users' choice of social media platform from various factors

Social media platforms like Facebook, Twitter, WhatsApp, and Instagram have gained educational traction due to unparalleled accessibility and user-friendliness, eliminating cumbersome registration processes (Hamadi et al., 2021). Their inclusive nature ensures that diverse age groups and backgrounds can easily access educational content, broadening their reach in the education sector. The versatility of these platforms, supported by various media forms, allows educators to present learning materials in diverse formats, fostering interactive and engaging learning experiences (Dermendzhieva & Tsankov, 2023). Additionally, social media platforms' interactive nature promotes robust engagement between educators and students. Features like posting, commenting, sharing, lively discussions, rapid Q&A sessions, and fruitful idea exchanges have become feasible (Ahmed, 2020). Social media-supported education enhances student-teacher interaction through digital tools in the traditional education system (Cavus et al., 2021). This creates an environment where educators can promptly respond to queries, and students can collaborate effectively, enriching the educational process (Sansi et al., 2023).

Platforms like WhatsApp, enabling instant messaging, have revolutionized communication in education. They facilitate real-time updates and vital announcements, streamlining communication for

educators. This ensures students receive timely information, fostering an environment of awareness and responsiveness. Beyond administrative communication, these platforms enhance immediate and personalized interactions between educators and students, making educational discourse more accessible and engaging. Instagram and similar platforms emphasize visual content, amplify the impact of visualizations in education, aid in conveying complex concepts, and enhance overall learning engagement. Notably, these platforms were crucial in facilitating remote learning during the pandemic. As conduits for content dissemination, assignment submission, and feedback provision, they bridge the gap between physical classrooms and virtual learning environments, ensuring educational continuity (Figueras-Maz et al., 2021).

Visual communication is a valuable tool for design students, reaching global audiences simultaneously. Easy-to-use applications offer excellent opportunities for these students. The relationships formed through social media and other networks are crucial for their education and future careers. Utilizing each platform's unique features enhances the educational experience. Twitter's succinct nature supports concise discussions and tracking current trends, while Instagram excels in sharing learning experiences through visual narratives.

3.2 Opportunities and Challenges in Adopting Social Media for Education

According to Manca (2020), social media has positive benefits for learning. Higher education fosters participation, engagement, reflective thinking, and collaborative learning and expands learning content across various formal and informal settings (Goodyear & Armour, 2021; Manca et al., 2021; Richter et al., 2022). Challenges include the necessity of digital literacy skills, the risk of irrelevant content, concentration disruption, addiction, misinformation, hoaxes, and technical challenges like internet connectivity. According to Arteaga Sánchez et al., (2019), academics must enhance social media use in education, facing challenges like cultural resistance, pedagogical concerns, and institutional constraints. However, social media is emphasized in online learning for interaction, communication, and content sharing (Hosen et al., 2021). Expressing social media's significant potential in education provides opportunities for student engagement, knowledge sharing, and expression. Grounded in social constructivism theory, this interaction facilitates learning and knowledge creation, positioning social media as a constructive tool that complements traditional learning methods (Al Sabi et al., 2022).

According to Chugh et al., (2021), social media has the potential to integrate diverse information and learning resources, expanding the range of learning content. Platforms like WhatsApp in mobile learning (M-learning) were recognized for enhancing interaction between students and teachers, improving communication skills, and providing convenient learning opportunities anytime and anywhere (Azman et al., 2023). This perspective aligns with Stathopoulou et al. (2019), who noted that individuals commonly use social media to share information, access learning materials, utilize academic resources, view lecture notes, and communicate with peers and professors. However, challenges related to pedagogical and technological aspects of integrating social networking practices into teaching and academic courses must be addressed. According to Belova et al., (2022), while students may possess technical expertise in social media, they encounter difficulties applying this knowledge to media contexts or accurately understanding scientific aspects. Recommendations include utilizing the benefits of social media for teaching and learning, preparing official guidelines to regulate its use, and addressing issues related to students' and teachers' perceptions of the academic environment. Several researchers (Cabero-Almenara et al., 2022; Mithans et al., 2023), highlight policy and practice implications, including questions about participants' perceptions of the academic environment and didactic agreements.

Despite potential benefits, many educators remain uncertain about integrating social media tools and assessing their impact on student learning. Researchers emphasize the tensions arising when participatory social media practices are introduced into formal learning contexts. Valid concerns about social media use both inside and outside the classroom, particularly the escalating issue of cyberbullying, highlight the need for careful consideration of its implications on adolescent mental health (Ademiluyi et al., 2022). Moreover, students who invest substantial time in social media exhibit lower academic performance in exams, facing additional challenges like security and privacy issues

(Giumetti & Kowalski, 2022; Saqr & Alamro, 2019). Excessive social media usage is linked to adverse effects, including eye strain and health problems for educators and students (Fu et al., 2021). In today's society, integrating social media into pedagogical frameworks necessitates a comprehensive foundation rooted in crucial domains such as digital literacy, age-related digital maturity, emotional regulation capacity, and effective time management in the digital realm.

Digital literacy extends beyond primary online navigation, encompassing a nuanced understanding of digital interaction, information dissemination, and constructive contributions to online dialogues. Proficient digital literacy involves the ability to discern between authentic content and misleading narratives and awareness of digital risks like misrepresentative news and cyber-security threats. Age often correlates with a heightened maturity that aids individuals in navigating the complexities of digital interactions wisely. This maturity is a protective mechanism, preventing hasty decisions with lasting consequences in the expansive digital realm. In the digital environment, emotions can be intensified, leading to impulsive reactions. The crucial skill of emotion regulation becomes paramount, fostering interactions characterized by respect, empathy, and restraint. This regulation creates online spaces conducive to constructive dialogue and authentic human connections. Additionally, mastering time management is essential in meeting the demands of the digital age, particularly for newcomers who may find tracking digital tool usage challenging. Proficient time management becomes imperative in this context.

Education 5.0 emphasizes the integration of values, technical skills, and ethical considerations in education. This paradigm shift highlights the necessity for learners to acquire not only knowledge and technical prowess but also moral wisdom and ethical awareness, particularly in the context of emerging technologies like AI and social media. The advancement of AI underscores the significance of upholding ethical values such as privacy, security, and fairness when using these technologies. Therefore, education aims to cultivate technically proficient professionals and individuals who are responsible, possess integrity, and can make positive contributions to an increasingly complex digital society.

3.3 Implications and Recommendations for Using Social Media in Education

The study highlights significant implications and recommendations for using social media in education, emphasizing its potential in higher education to improve engagement between students and faculty. As a versatile tool for communication, collaboration, and content dissemination, social media fosters active participation in learning, contributing positively to individual and team development. In the current digital landscape, Facebook maintains its global dominance among social media platforms, with seven platforms surpassing one billion monthly active users. Notably, Meta owns four of these platforms, indicating their extensive reach and influence. The dynamic nature of the social media landscape is evident, with 15 platforms boasting at least 400 million active users as of July 2023.

At the forefront of the digital revolution, Facebook boasts an impressive 2.989 billion monthly active users, showcasing its enduring appeal. YouTube follows closely with an unparalleled advertising reach, encompassing 2.527 billion individuals. WhatsApp is a preferred communication platform with 2 billion monthly active users, and Instagram stands out with an impressive 2 billion monthly active users, highlighting its visual-centric appeal. These figures underscore the dynamic nature of the modern digital ecosystem, where social media platforms play a crucial role in shaping global communication, connectivity, and engagement. The diverse range of platforms with substantial user bases emphasizes the undeniable power of social media in forging connections and disseminating information. As these platforms evolve, their transformative impact shapes how we communicate and experience the digital age.

The preference for platforms like Facebook, WhatsApp, and YouTube suggests an interest in diverse media types. Educators should design varied content formats to accommodate different learning styles. Research indicates that people use social media for various purposes, with Facebook and WhatsApp for communication and educational collaboration and YouTube and TikTok for video tutorials, self-learning, and entertainment. Instagram is primarily used for sharing personal content like photos and stories (Barta et al., 2023; Trabelsi et al., 2022; Vizcaíno-Verdú & Abidin, 2023).

As higher education institutions prepare for the post-COVID era, they re-evaluate their tech tools, focusing on sustainable, scalable, and adaptable technologies (Franco-Riquelme & Rubalcaba, 2021). Social media and videos are noteworthy examples (Trabelsi et al., 2022). In the modern context, social media has become indispensable, serving various purposes. It fosters connection, comfort, and a sense of belonging, providing learners with a robust support network and facilitating healthy interactions. If utilized effectively, flexible interactions on social media can enhance learning, making it more enjoyable and engaging.

Moreover, educators need skill development for effective social media integration in teaching. Faculty development programs should include training on platform operation, pedagogical integration, and balancing online and face-to-face interactions. Awareness campaigns are crucial to address the potential adverse effects of excessive social media use on students and educators, promoting responsible usage and healthy digital habits.

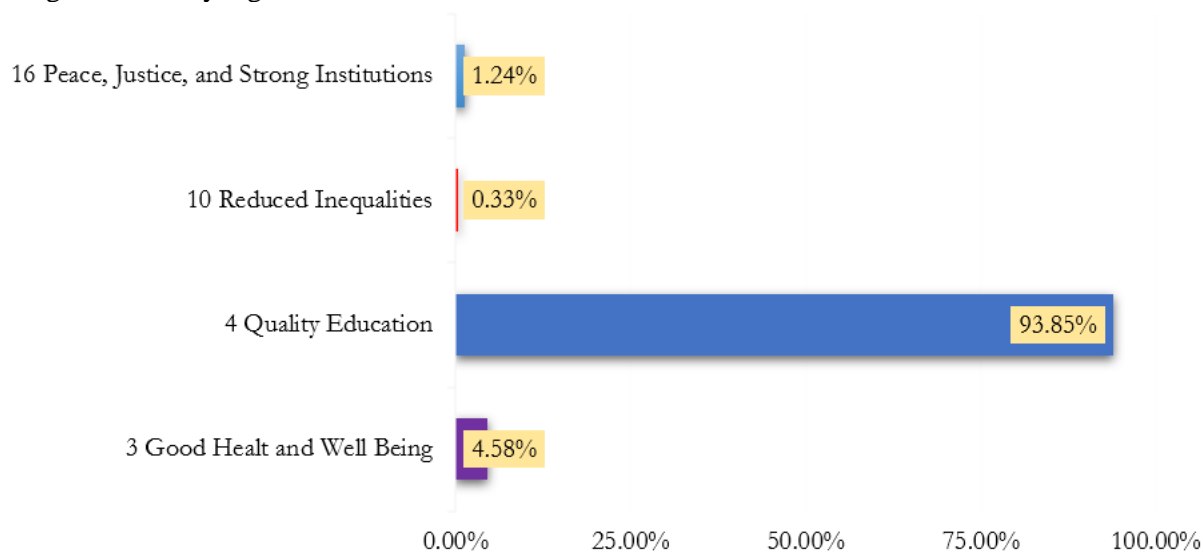


Fig. 7 Implications of social media adoption in education for achieving SDGs 2030

Figure 7 illustrates the multifaceted impact of integrating social media into education, emphasizing its role in advancing the Sustainable Development Goals (SDGs). The data highlights the critical contribution of social media adoption to SDG 4: Quality Education, accounting for 93.85%. This underscores its transformative potential in breaking traditional educational barriers, providing equal access to quality resources, and equipping individuals with skills crucial for progress across all SDGs. Additionally, the allocation of 4.58% to SDG 3: Good Health and Well-Being underscores the indirect yet significant link between education and health, fostering health literacy and healthier lifestyles through social media information. SDG 16: Peace, Justice, and Strong Institutions have seen a 1.24% annual progress increase since 2014, emphasizing the role of education programs that promote critical thinking and ethical reasoning through social media integration. SDG 10: Reduced Inequalities acknowledges the contribution of social media-driven education with 0.33%, emphasizing its potential to bridge gaps, provide access to marginalized communities, and enhance inclusivity, reducing knowledge disparities. This comprehensive interpretation underscores social media's potential as an educational catalyst supporting SDGs for a sustainable and equitable future (Killian et al., 2019; Kioupi & Voulvoulis, 2022).

Integrating social media into education necessitates a pedagogical shift (Samala, Rawas, et al., 2024; Samala, Usmeldi, et al., 2023). Educators should leverage platform interactivity to foster collaborative learning, critical thinking, and digital literacy skills (Samala, Bojic, et al., 2023). Recommendations for educational and social media use include establishing clear policies, providing comprehensive training and support, curating quality content, promoting meaningful interaction and feedback, integrating into assessment, delivering digital citizenship education, monitoring and evaluation, and adopting adaptable approaches tailored to the learning context. By considering these implications and recommendations, educational institutions can optimize social media's potential to

enhance the learning and teaching experience while addressing challenges and promoting responsible usage.

4. Conclusion

In conclusion, this study outlines the decade-long trend of social media adoption in education, with students and instructors favoring platforms like Facebook, Twitter, WhatsApp, and Instagram. These platforms are valued for their accessibility, user-friendliness, and inclusivity, catering to diverse age groups. Their flexibility allows for dynamic sharing of educational content and fosters engaging learning experiences. Social media facilitates strong engagement between educators and students through features like posting and interactive discussions. However, addressing challenges such as digital literacy and time management is crucial to prevent adverse effects. Integrating social media into teaching requires a pedagogical shift, organizational support for educator development, and policy establishment. Institutions should provide training, encourage platform feature utilization for diverse learning experiences, and consider implications and recommendations to optimize social media's potential in education, emphasizing a balanced and adaptive approach.

5. Author Contributions

Agariadne Dwinggo Samala: Conceptualization, Methodology, Software, Data Curation, Formal Analysis, Visualization, Supervision, Writing—original draft, Writing—review and editing.

Soha Rawas: Formal Analysis, Validation, Writing—review and editing.

Santiago Criollo-C: Formal Analysis, Validation, Writing—review and editing.

Aprilla Fortuna: Formal Analysis, Visualization, Writing—review and editing.

Xiaohan Feng: Formal Analysis, Writing—review and editing.

Febri Prasetya: Formal Analysis, Writing—review and editing.

Nilay Özsağ Uluçay: Formal Analysis, Writing—review and editing.

Putra Jaya: Writing—review and editing.

Romel Hidayat: Writing—review and editing.

6. Conflict of Interest

The authors declare that no conflict of interest could affect the results of this research.

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