

## Social media and communication technology in education: A Literature review

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**Abstract:** This article aims to examine the impact of the use of social media and communication technologies in the context of education in the digital age. Utilizing a literature review as its primary method, the study collects and analyzes data from various prior studies using the PRISMA 2020 methodology. The analysis technique involves comparing research findings and integrating insights from diverse academic sources to gain a comprehensive understanding of the research topic. The results reveal that social media and communication technology enhance student engagement and motivation in learning. Additionally, the use of social media and communication technology in education demonstrates varied effects on students' learning motivation and poses potential risks to their mental well-being. These findings provide crucial insights for educators and policymakers in effectively and safely integrating digital technology into education.

**Keywords:** Communication technology, learning motivation, mental well-being, social media

## Media sosial dan teknologi komunikasi dalam pendidikan: Sebuah tinjauan literatur

**Abstrak:** Artikel ini bertujuan untuk mengkaji dampak penggunaan media sosial dan teknologi komunikasi dalam konteks pendidikan di era digital. Menggunakan *literature review* sebagai metode utamanya, penelitian ini mengumpulkan dan menganalisis data dari berbagai studi terdahulu menggunakan metodologi PRISMA 2020. Teknik analisis melibatkan perbandingan temuan penelitian dan penggabungan wawasan dari sumber-sumber akademis yang beragam untuk mendapatkan pemahaman yang komprehensif tentang topik penelitian. Hasilnya mengungkapkan bahwa media sosial dan teknologi komunikasi meningkatkan keterlibatan dan motivasi belajar siswa. Penggunaan media sosial dan teknologi komunikasi dalam pembelajaran juga memperlihatkan efek yang bervariasi pada motivasi belajar siswa dan menimbulkan potensi risiko terhadap kesejahteraan mental siswa. Temuan ini memberikan wawasan penting bagi pendidik dan pembuat kebijakan dalam mengintegrasikan teknologi digital secara efektif dan aman dalam pendidikan.

**Kata Kunci :** Teknologi komunikasi, motivasi belajar, kesejahteraan mental, media sosial

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## INTRODUCTION

In the current digital era, social media and communication technology have undergone significant revolutions, impacting various aspects of life, including education. Amidst these changes, it becomes crucial to understand how these technologies influence teaching methods and educational interactions. The rapid evolution of social media and communication technology usage has significantly affected how students and educators interact and learn, underscoring the importance of this research. Sigalés (2021) highlights how these technologies have transformed the way students learn, extending the boundaries of traditional learning. Learning is no longer confined to face-to-face interactions in classrooms (Willermark, 2021) instead, social media and various digital communication platforms have opened new horizons in education, creating more flexible, interactive, and accessible learning spaces (Psyché et al., 2020). This phenomenon has spurred a paradigm shift from teacher-centered teaching methods to more student-centered models (Khimmatiev et al., 2021; Wulf, 2019), where students have more control over their own learning processes (Sieföhina, 2022).

With the widespread access to the internet and the the extensive use of mobile devices, students of all ages are becoming more integrated with digital tools in their daily lives, including in their learning processes (Crittenden et al., 2019; Kazantseva et al., 2019). This literature review is essential to identify and comprehend the dual roles of social media and communication technology in education: as enriching tools and as potential sources of new educational challenges. Social media, in particular, has transformed from merely a platform for communication and social interaction to a dynamic learning tool (Moodley, 2019; Patmanthara et al., 2019). This raises an important question: How do social media and communication technology affect the way students acquire, process, and utilize information?

Changes in how information is consumed and produced, driven by advancements in digital technology, have significantly altered the educational landscape. The proliferation of digital platforms has not only democratized access to information but also revolutionized the way educators teach and students learn (Lukasheva et al., 2021). This research investigates how these changes affect student learning and development, highlighting the importance of equipping the younger generation with the necessary skills to thrive in an increasingly digitalized society. This research explores the implications of these digital shifts for pedagogical strategies and the integration of technology into curricular design. In this digital era, information is not only passively received but also generated and shared by students (Morais et al., 2017). This requires a new approach in education that emphasizes the importance of digital literacy and critical thinking skills.

Recent studies indicate that the use of social media and communication technology in education enables more collaborative and interactive learning (Gaceri et al., 2022), enhancing student engagement and providing access to a wealth of resources and global perspectives. These technologies have facilitated new forms of collaboration, allowing students to participate in online communities and projects that transcend geographical boundaries. Additionally, the interactive nature of these platforms supports diverse learning motivation and can lead to a deeper understanding of course materials. However, these advancements also present new challenges, such as concentration disruptions and mental health issues (Atteh et al., 2020). The constant influx of information and the potential

for overstimulation can lead to reduced attention spans and increased anxiety among students. Furthermore, the prevalence of social media in students' lives sometimes contributes to a blurring of personal and educational boundaries, which can impact their mental well-being and academic performance. While some students find social media to be an enriching learning tool (Siddig, 2020), offering opportunities for creative expression and the development of digital literacy skills, others may feel distracted or overwhelmed by the persistent connectivity and the pressure to be constantly engaged online. Therefore, understanding this dynamic and how educators can leverage it to enhance learning quality is crucial. Educators are tasked with integrating these technologies in a manner that maximizes their educational potential while mitigating their downsides. This requires a balanced approach, one that harnesses the advantages of these technologies and addresses the emerging challenges, such as attention disruption and mental health risks. It involves not only the incorporation of technology into curricula but also the development of strategies to help students navigate the digital landscape responsibly and effectively.

The use of social media and communication technology in the context of education in the digital era has significant implications. This article aims to explore how the use of social media and communication technology influences students' learning experiences and the overall educational process. Through the Narrative Literature Review method, this article provides a comprehensive overview of the roles of social media and communication technology in education and investigates how they can be effectively integrated into contemporary education, striking a balance between harnessing technological advantages and addressing emerging challenges. The research focuses on the impact of social media and communication technology on student motivation and engagement in learning, the influence of relying on social media as a primary source of information on the quality of learning, differences in usage among students from various age groups and educational backgrounds, effective strategies for teachers to incorporate social media into their teaching methods to enhance learning outcomes, and the impact of using social media and communication technology on the mental health and well-being of students in an educational context. By examining the findings from these research areas, this article is expected to provide profound insights into the roles and impacts of social media and communication technology in modern education.

## **METHOD**

### **Research approach**

This article employs the PRISMA 2020 methodology, as outlined by Page et al., (2021), to conduct a Narrative Literature Review. This methodology was chosen for its provision of a clear and structured framework for identifying, selecting, and including relevant literature, thereby producing a comprehensive and systematic overview of the impact of social media and communication technology in Education. The article reviews the influence of social media and communication technology in Education, guided by the following research questions:

- a) RQ1 : How do social media and communication technology influence student motivation and engagement in the learning process?
- b) RQ2 : To what extent do students rely on social media as a primary source of information and academic knowledge, and how does this affect the quality of their learning?

- c) RQ3 : What are the differences in the use of social media and communication technology among students from various age groups or educational backgrounds?
- d) RQ4 : How can teachers effectively integrate social media and communication technology into their teaching strategies to enhance learning outcomes?
- e) RQ5 : What is the impact of using social media and communication technology on the mental health and well-being of students in an educational context?

### **Phases in the PRISMA 2020 methodology**

The PRISMA 2020 methodology involves three main phases:

- a) Identification  
In this phase, initial literature search is conducted using academic databases such as IEEE Explorer. This platform offers a range of publications, including journals, conferences, and books, providing diverse perspectives and in-depth analysis on topics related to educational technology. The search and data export features of IEEE Explorer facilitate the process of searching and collecting data. Keywords used in the data search include “Social Media as a Learning Tool,” “Social Media Educational Impact,” “Teacher Strategies for Social Media,” and “Impact of Social Media on Student Learning Style.” The aim of this search is to gather as much relevant literature as possible.
- b) Screening  
After the initial collection, the literature is screened to remove studies that are not relevant or do not meet the inclusion criteria. Inclusion criteria include topic relevance, source quality, publication time frame (between 2013-2023/last 10 years), open access, and publication language using English.
- c) Included  
In this phase, the screened literature is further reviewed to determine whether it meets specific criteria for inclusion in the review. This involves in-depth reading and qualitative evaluation of each selected source.

### **Analysis process**

After selecting relevant literature, a thorough analysis is conducted to identify key themes, trends, and significant findings. This process involves synthesizing information from various sources to generate a comprehensive understanding of the research topic. Subsequently, the results of the review are articulated in the discussion.

### **PRISMA tool assistance**

To facilitate this process, the PRISMA2020 tool developed by Haddaway et al., (2022) is used. It provides an R and Shiny application for generating interactive and transparent PRISMA flow diagrams. This tool can be accessed at [https://estech.shinyapps.io/prisma\\_flowdiagram](https://estech.shinyapps.io/prisma_flowdiagram)

## **RESULTS**

Based on the PRISMA 2020 methodology, the literature selection process yielded the following findings:

## Identification

A total of 96 articles were obtained through a search of the IEEE Explorer database using predefined keywords. Four keywords were employed for the article search. The keywords used in the data search were “Social Media as a Learning Tool,” “Social Media Educational Impact,” “Teacher Strategies for Social Media,” and “Impact of Social Media on Student Learning Style.” For the keyword “Social Media as a Learning Tool,” 72 articles were found, comprising 4 publication titles: IEEE Access (68 articles), IEEE Transactions on Learning Technologies (2 articles), Big Data Mining and Analytics (1 article), and Journal of Social Computing (1 article). The highest number of articles was found in the year 2021 with 21 articles, followed by 2020 (16 articles), 2019 (13 articles), 2022 (10 articles), 2023 (9 articles), 2018 (2 articles), and 2013 (1 article).

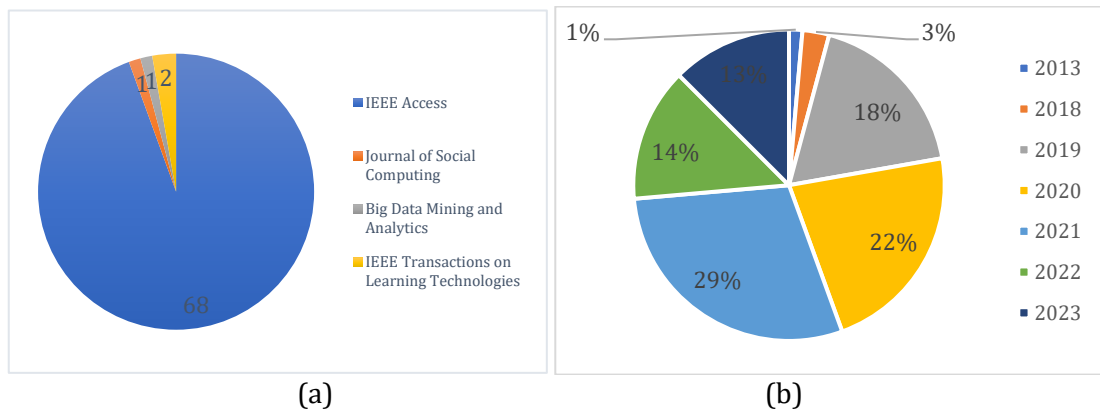


Fig. 1. Search results for articles with keywords: “social media as a learning tool”  
(a) Publication title. (b) Publication year

For the keyword “social media educational impact,” 18 articles were found, comprising 2 publication titles: IEEE Access (17 articles) and IEEE Transactions on Learning Technologies (1 article). The highest number of articles was discovered in 2021 with 5 articles, followed by 2020 (4 articles), 2019 (4 articles), 2023 (2 articles), 2022 (1 article), 2018 (1 article), and 2015 (1 article).

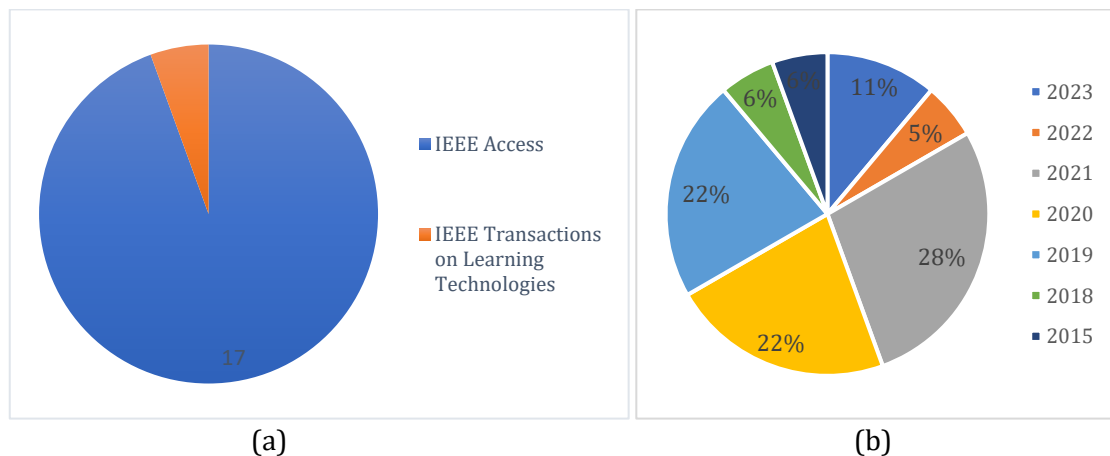


Fig. 2. Search results for articles with keywords: “social media educational impact”.  
(a) Publication title. (b) Publication year

For the keyword “Teacher Strategies for Social Media,” 3 articles were found, all under the publication title IEEE Access. The articles were distributed as follows: 2 articles in 2021 and 1 article in 2017. Regarding the keyword “Impact of Social Media on Student Learning Style,” 3 articles were identified. The publication titles for these articles are the 2023 2nd Edition of IEEE Delhi Section Flagship Conference (DELCON) (1 article), Fifth International Conference on the Innovative Computing Technology (INTECH 2015) (1 article), and IEEE Transactions on Computational Social Systems (1 article). The articles were distributed with 2 articles found in 2023 and 1 article in 2015.

### Screening

Out of the initial 96 articles, 4 articles were excluded due to duplication, leaving 92 articles. These were then screened for relevance to the topic, source quality, and publication time frame. Through an in-depth examination using the 27-item checklist based on the PRISMA 2020 checklist (Page et al., 2021) 15 relevant articles were identified for review.

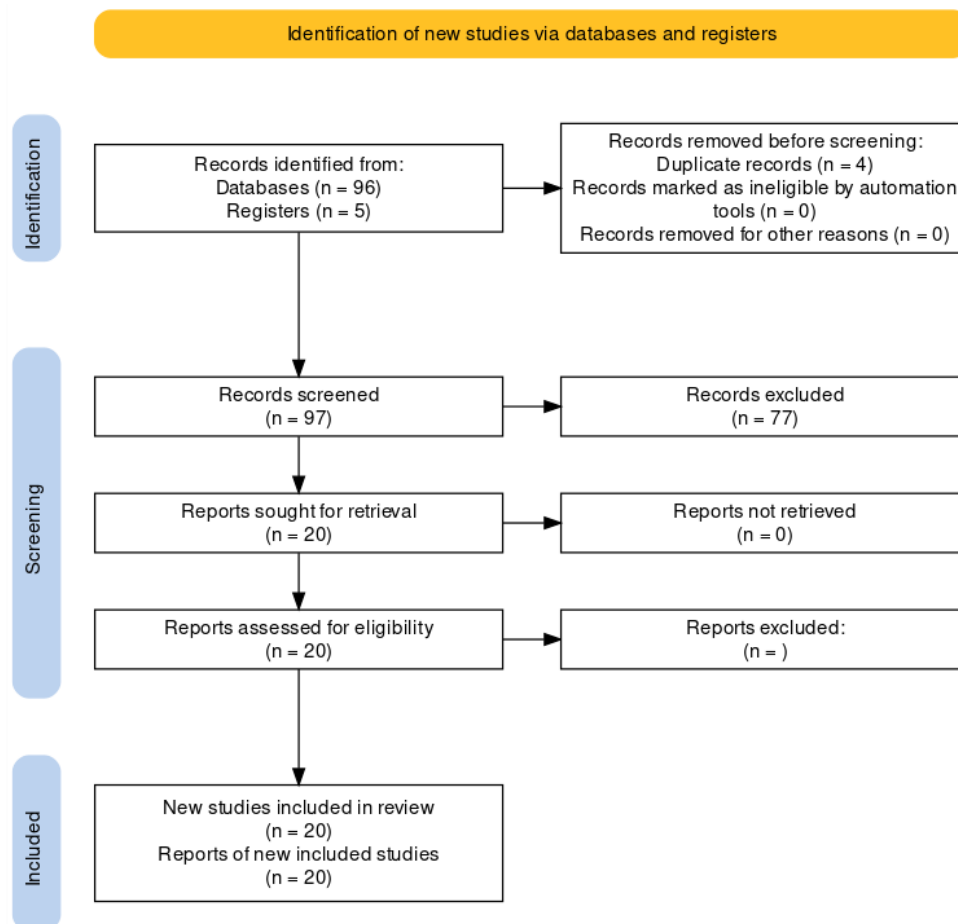


Fig. 3. Flow diagram of PRISMA 2020

### Included

Ultimately, there were 15 selected articles and 5 articles from a snowball search, where known literature was used as a starting point to seek additional related literature. Therefore, a total of 20 articles were further analyzed in this review.

Table 1. Articles selected from the database

<b>Topic</b>	<b>Author</b>	<b>Title</b>	<b>Year</b>	<b>DOI</b>
Social Media and Academic Performance	Al-Maatouk et al.	Task-Technology Fit and Technology Acceptance Model Application to Structure and Evaluate the Adoption of Social Media in Academia	2020	<a href="https://doi.org/10.1109/ACCESS.2020.2990420">https://doi.org/10.1109/ACCESS.2020.2990420</a>
Students' Acceptance of E-learning System	Salloum et al.	Exploring Students' Acceptance of E-Learning Through the Development of a Comprehensive Technology Acceptance Model	2019	<a href="https://doi.org/10.1109/ACCESS.2019.2939467">https://doi.org/10.1109/ACCESS.2019.2939467</a>
Social Media in Collaborative Learning	Alenazy et al.	Validation of TAM Model on Social Media Use for Collaborative Learning to Enhance Collaborative Authoring	2019	<a href="https://doi.org/10.1109/ACCESS.2019.2920242">https://doi.org/10.1109/ACCESS.2019.2920242</a>
Smart Networks in Grammar Learning	Refat et al.	Interactive Learning Experience-Driven Smart Communications Networks for Cognitive Load Management in Grammar Learning Context	2019	<a href="https://doi.org/10.1109/ACCESS.2019.2915174">https://doi.org/10.1109/ACCESS.2019.2915174</a>
Deep Learning in Social Media Analytics	Hayat et al.	Towards Deep Learning Prospects: Insights for Social Media Analytics	2019	<a href="https://doi.org/10.1109/ACCESS.2019.2905101">https://doi.org/10.1109/ACCESS.2019.2905101</a>
Cyberstalking and Cyber Bullying	Al-Rahmi et al.	How Cyber Stalking and Cyber Bullying Affect Students' Open Learning	2019	<a href="https://doi.org/10.1109/ACCESS.2019.2891853">https://doi.org/10.1109/ACCESS.2019.2891853</a>
Academic Performance and Learner Traces	Popescu and Leon	Predicting Academic Performance Based on Learner Traces in a Social Learning Environment	2018	<a href="https://doi.org/10.1109/ACCESS.2018.2882297">https://doi.org/10.1109/ACCESS.2018.2882297</a>
Sentiment Analysis in Twitter	Bouazizi and Ohtsuki	Multi-Class Sentiment Analysis in Twitter: What if Classification is Not the Answer	2018	<a href="https://doi.org/10.1109/ACCESS.2018.2876674">https://doi.org/10.1109/ACCESS.2018.2876674</a>
Student Academic Performance in Higher Education	Alalwan et al.	Integrated Three Theories to Develop a Model of Factors Affecting Students' Academic Performance in Higher Education	2019	<a href="https://doi.org/10.1109/ACCESS.2019.2928142">https://doi.org/10.1109/ACCESS.2019.2928142</a>
Detection of Depression on Social Media in Arabic Posts	Alghamdi et al.	Predicting Depression Symptoms in an Arabic Psychological Forum	2020	<a href="https://doi.org/10.1109/ACCESS.2020.2981834">https://doi.org/10.1109/ACCESS.2020.2981834</a>

Signs of Emotion on Social Media to Detect Radicalization	Araque and Iglesias	An Approach for Radicalization Detection Based on Emotion Signals and Semantic Similarity	2020	<a href="https://doi.org/10.1109/ACCESS.2020.2967219">https://doi.org/10.1109/ACCESS.2020.2967219</a>
Detection and Analyze the Geographical Location Information from Social Media	Fan et al.	A Hybrid Machine Learning Pipeline for Automated Mapping of Events and Locations From Social Media in Disasters	2020	<a href="https://doi.org/10.1109/ACCESS.2020.2965550">https://doi.org/10.1109/ACCESS.2020.2965550</a>
Startup Analysis on Twitter	Alotaibi et al.	Startup Initiative Response Analysis (SIRA) Framework for Analyzing Startup Initiatives on Twitter	2020	<a href="https://doi.org/10.1109/ACCESS.2020.2965181">https://doi.org/10.1109/ACCESS.2020.2965181</a>
Big Educational Data and Analytics	Ang et al.	Big Educational Data & Analytics: Survey, Architecture and Challenges	2020	<a href="https://doi.org/10.1109/ACCESS.2020.2994561">https://doi.org/10.1109/ACCESS.2020.2994561</a>
Online Extremism Detection	Aldera et al.	Online Extremism Detection in Textual Content: A Systematic Literature Review	2021	<a href="https://doi.org/10.1109/ACCESS.2021.3064178">https://doi.org/10.1109/ACCESS.2021.3064178</a>

Table 2. Articles selected from registers

Topic	Author	Title	Year	DOI
Influence of social media on students' academic performance	Atteh et al.	A Thoughtful Overview of Social Media Usage among Students and Its Impact on their Academic Work	2020	<a href="https://doi.org/10.9734/ajarr/2020/v8i330201">https://doi.org/10.9734/ajarr/2020/v8i330201</a>
Integration of social media into learning	Gaceri et al.	Incorporating Social-Media to Enhance Collaboration in Online Learning	2022	<a href="https://doi.org/10.32996/jcsts.2022.4.1.3">https://doi.org/10.32996/jcsts.2022.4.1.3</a>
Adult learners adopt social media as an e-learning platform	Moodley	The Adoption Of Social Media By Adult Learners As An E-Learning Platform	2019	<a href="https://doi.org/10.20472/IAC.2019.048.036">https://doi.org/10.20472/IAC.2019.048.036</a>
Academic knowledge through social media platforms	Patmanthara et al.	Social Media as a Learning Media: A Comparative Analysis of Youtube, WhatsApp, Facebook and Instagram Utilization.	2019	<a href="https://doi.org/10.1109/ICEEIE47180.2019.8981441">https://doi.org/10.1109/ICEEIE47180.2019.8981441</a>



Learning motivation, teaching strategies in language education	Siddig	Social Media in Teaching of Languages.	2020	<a href="https://doi.org/10.3991/ijet.v15i12.12645">https://doi.org/10.3991/ijet.v15i12.12645</a>
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## DISCUSSION

### **The impact of social media and communication technology on student motivation and engagement in the learning process**

In the current digital era, social media and communication technology have revolutionized many aspects of life, including education. Recent research highlights how social media and communication technology can influence student motivation and engagement in the learning process. Atteh et al. (2020) present an in-depth analysis of social media usage among students and its impact on their academic performance. They found that strategic and focused use of social media can be a rich source of information and a collaborative platform to enhance learning motivation. However, this research also emphasizes the importance of proper guidance in using social media to avoid distractions that could diminish students' academic performance. Furthermore, Bouazizi and Ohtsuki (2018) provide additional perspective by exploring the use of Twitter for sentiment analysis in an educational context. Although the primary focus of this study is not directly on learning motivation, its results offer insights into how data from social media, like Twitter, can be used to understand and improve interactions in an educational context. This demonstrates the potential of social media as a tool for gathering feedback and understanding the emotional dynamics of students, which can contribute to the development of more effective and engaging learning strategies. Thus, the research by Atteh et al. (2020) and Bouazizi and Ohtsuki (2018) collectively highlights the importance of social media and communication technology in education. They show that, when used appropriately, social media not only serves as a communication tool but also as a rich learning platform, supporting collaboration, and enhancing student motivation and engagement in the learning process. However, the importance of guidance and supervision in the use of social media for educational purposes cannot be overlooked, to ensure that its benefits are maximized without sacrificing students' academic performance.

Siddig (2020) extends this understanding by examining the use of social media in the context of language teaching. Siddig found that integrating social media as an educational tool can significantly enhance student engagement and motivation. A specific example presented is the use of social media platforms for language assignments and class discussions. This encourages active participation and deeper interaction between students and the learning material. In the context of language teaching, social media offers various opportunities for authentic language practice and social interaction. Students can engage in meaningful discussions, collaborate on language projects, and receive immediate feedback from teachers and peers. This not only improves their language skills but also builds confidence and engagement in the learning process. Additionally, social media allows students to connect with native speakers and language communities, providing them access to rich and diverse resources and content. Siddig also highlights that the use of social media

in language teaching allows for a more flexible and adaptive approach to learning. It facilitates personalized learning, where students can learn at their own pace and explore topics of interest to them. Moreover, social media can be an effective tool for incorporating cultural aspects into language teaching, providing a richer and more relevant context for language learning. Siddig's (2020) research asserts that social media, when appropriately integrated into language teaching, not only enhances student engagement and motivation but also enriches the overall language learning experience. It demonstrates the potential of social media as a valuable educational tool, particularly in the dynamic and interactive context of language teaching.

The importance of e-learning and communication technology, including social media in education, is also emphasized by Refat et al. (2019), and Salloum et al. (2019). In their study, Refat et al. (2019) explored how smart communication networks driven by interactive learning experiences can manage cognitive load in the context of grammar learning. The research indicates that technology can enrich the learning experience by providing more dynamic interactions and adapting cognitive load. This contributes to broader access to educational resources and enables more personalized learning approaches, both of which can enhance student motivation and engagement. Additionally, Salloum et al. (2019) highlighted how student acceptance of e-learning can be improved through the development of a comprehensive technology acceptance model. Salloum and colleagues found that e-learning technology can enhance student engagement by providing more flexible and interactive learning methods. This allows students to access learning materials from anywhere and at any time, facilitating more independent and student-centered learning. Collectively, these two studies demonstrate that e-learning and communication technology play a crucial role in modern education. They offer new ways to access information, collaborate, and learn that are more in line with the needs and learning styles of individual students. By providing more dynamic interactions and adapting cognitive load, these technologies not only enrich the learning experience but also help students stay motivated and engaged in their learning process. Thus, the research by Refat et al. (2019), and Salloum et al. (2019) affirms the importance of integrating e-learning and communication technology in education to enhance student engagement and motivation, as well as to provide a richer and more personalized learning experience.

Alenazy et al. (2019) complement this understanding by specifically highlighting the role of social media in collaborative learning. The study explores how social media can be utilized as a platform for teamwork and idea exchange, enabling students to effectively engage in group discussions and joint projects. The research found that social media, when used in a collaborative learning context, can transform the way students interact and collaborate. Social media serves not just as a communication tool but also as an interactive learning space that enriches the educational experience. The research also indicates that the use of social media in collaborative learning can enhance student engagement and facilitate deeper learning. Students can share resources, provide feedback, and work together on projects that allow them to learn from each other and develop essential teamwork skills. Additionally, social media offers opportunities for students to engage in more authentic and contextual learning, where they can apply learned concepts in real-world situations. Alenazy et al. (2019) also emphasize that the use of social media in collaborative learning requires guidance and support from educators. This includes developing strategies to

effectively integrate social media into the curriculum and ensuring that students use these platforms in a responsible and productive manner. Thus, the research by Alenazy and colleagues affirms that social media has significant potential to enhance collaborative learning. It suggests that social media, when used appropriately, can be a valuable learning tool, enriching the educational experience and supporting the development of students' collaborative and communication skills.

From these studies, it is evident that social media and communication technology, when integrated appropriately into curricula and teaching practices, have significant potential to enhance student motivation and engagement in learning. The research by Atteh et al. (2020), and Bouazizi & Ohtsuki (2018) indicates that social media can be a rich source of information and a collaborative platform that supports learning motivation, although it requires proper guidance to avoid distractions. Siddig (2020) adds to this perspective by demonstrating how social media can enhance engagement and motivation in language teaching, encouraging active participation and deeper interaction between students and learning materials. This suggests that social media can be an effective educational tool, especially in contexts requiring authentic interaction and language practice. Refat et al. (2019), and Salloum et al. (2019) emphasize the importance of e-learning and communication technology in providing more dynamic interactions and adapting cognitive load, allowing broader access to educational resources and more personalized learning approaches. This indicates that these technologies can enrich the learning experience and help students stay motivated and engaged. Finally, Alenazy et al. (2019) highlight the role of social media in collaborative learning, showing that social media can transform the way students interact and collaborate, enriching the educational experience and supporting the development of collaborative and communication skills. Overall, these studies affirm that the integration of social media and communication technology in education is not just technical but also requires an understanding and application of pedagogical methods to effectively utilize them in educational contexts. This demands educators not only to adopt these technologies technically but also to understand and apply pedagogical methods to effectively utilize them in an educational context.

### **The role of social media as a primary source of information and academic knowledge**

In today's digital era, the role of social media as a primary source of information and academic knowledge is increasingly being recognized. Research conducted by Patmanthara et al. (2019) presents a comparative analysis of the use of various social media platforms in a learning context. The results of this study highlight the dependence of students on platforms such as YouTube, WhatsApp, Facebook, and Instagram as essential tools in the learning process, demonstrating the intensive use of social media as a source of information and academic knowledge. This research provides valuable insights into how social media has evolved beyond just a communication tool, becoming a rich and accessible source of knowledge. By comparing the use of various platforms, the study reveals how each platform has its uniqueness in supporting the learning process. YouTube is often utilized for educational videos, while WhatsApp and Facebook support group discussions and collaboration. Instagram, with its focus on visual media, can be used for inspiration and presenting learning materials in a more creative manner. From an educational perspective, these findings highlight the importance of integrating social media into learning strategies

to leverage its full potential as an educational tool. It also emphasizes the need for educators to understand the unique characteristics of each platform to optimize their use in educational contexts. This understanding can help in tailoring the learning experience to suit different learning styles and preferences, making education more engaging and effective. Additionally, the research suggests that social media can be a powerful tool in facilitating collaborative learning and enhancing student engagement, which are crucial elements in the modern educational landscape.

Furthermore, the study by Hayat et al. (2019) delves into how social media analytics, particularly deep learning, affect the way students access and process information. Findings from this research reveal that the application of advanced analytic technologies in social media can assist students in better understanding complex materials, supporting the integration and interpretation of academic knowledge. Using deep learning techniques, students can process and interpret information obtained from social media more effectively. This includes the ability to analyze text, images, and other data found on social media platforms, which can provide deeper and more contextual insights into the topics being studied. Hayat et al. (2019) also demonstrate that the application of such advanced analytical technologies not only enriches the learning experience of students but also opens up new opportunities for more interactive and connected learning. By leveraging the data available on social media, students can engage in more dynamic and adaptive learning, allowing them to explore and understand academic concepts in a deeper and more meaningful way. The research by Hayat et al. (2019) affirms that the integration of advanced analytical technologies, like deep learning, in social media can significantly enhance the way students access and process academic information. This highlights the importance of adopting innovative technological approaches in education to improve student engagement and understanding. It suggests that educators and educational institutions should consider incorporating these technologies into their teaching methodologies to facilitate a more enriched and effective learning environment. This approach not only caters to the evolving digital landscape but also aligns with the learning preferences of the modern student, who is often more digitally savvy and accustomed to processing information in a multimedia format.

Meanwhile, Popescu and Leon, (2018), and Alalwan et al. (2019) explore the use of learner traces on social media as indicators of student academic performance. This study reveals that interactions and activities of students on social media platforms can provide valuable data regarding student engagement with the material and potential success in learning outcomes. Alalwan and colleagues research utilized a questionnaire survey based on constructivism theory, technology acceptance model, and behavioral theory to collect data from a total of 863 university students. The results indicate that students' behavioral intention to use social media for online learning collaboration has a positive effect on their academic work in educational institutions. The study found that online learning activities, as well as collaboration on social media, enhance the sharing of knowledge, information, and discussion. Therefore, it is recommended that the use of social media for these purposes should be encouraged by faculty members in higher education institutions. This suggests that student interactions and activities on social media platforms can provide valuable data regarding student engagement with material and potential success in learning outcomes. The research by Alalwan et al. (2019) affirms that social media can be a significant tool in

predicting and enhancing student academic performance. It highlights the importance of utilizing data from social media to understand and improve student engagement and academic performance. This research underscores the growing relevance of social media in the educational landscape and its potential as a resource for educators to better understand and support their students' academic journeys. By tapping into the rich data available through social media interactions, educators and institutions can gain insights into student behaviors and preferences, leading to more effective and tailored educational strategies.

These studies indicate that social media has evolved far beyond its original function as a communication platform to become a vital source of information and knowledge in education. By providing access to various resources and deep analytical facilities, social media opens new opportunities for more interactive and connected learning. Therefore, it is crucial for educational institutions to integrate social media into learning strategies to fully utilize its potential as an efficient educational tool. By offering access to a diverse array of resources and advanced analytical capabilities, social media platforms like YouTube, WhatsApp, Facebook, and Instagram have become integral to the academic experience. They not only facilitate the acquisition of information but also enhance the depth and interactivity of the learning process. The use of deep learning analytics, as explored by Hayat et al. (2019), further exemplifies how social media can transform the way students access, process, and engage with academic content. Moreover, the research by Popescu and Leon, (2018) and Alalwan et al. (2019) reveals that student interactions on social media platforms can yield valuable insights into their engagement levels and potential academic success. This data can be instrumental in predicting and improving student performance, offering a new dimension to learning analytics. Given these developments, it is imperative for educational institutions to recognize and embrace the multifaceted role of social media in education. Integrating social media into learning strategies is not just about adopting new technologies; it involves a strategic approach that encompasses understanding the unique characteristics of each platform and applying effective pedagogical methods to maximize their educational potential. This integration can significantly enhance the learning experience, making it more engaging, personalized, and aligned with the digital competencies of today's students. In conclusion, these studies collectively advocate for a more nuanced and proactive approach to incorporating social media in educational contexts. By doing so, educational institutions can unlock the full potential of social media as an efficient and dynamic educational tool, thereby enriching the learning experience and better preparing students for the increasingly digital world.

### **Variation in the use of social media and communication technology based on age and educational background**

In examining the variations in the use of social media and communication technology, factors such as age and educational background play a significant role. The study conducted by Moodley (2019) highlights specific dynamics associated with the adoption of social media by adult learners in an e-learning context. The results of this study provide key insights into the differences in social media usage between younger and adult students. This includes how preferences in the use of social media change with age and educational background, highlighting that adult learners might utilize social media differently compared to younger learners, often with more focused and directed purposes. This study reveals that

adult learners may use social media differently compared to younger learners, often with more focused and directed purposes. It indicates that preferences in social media usage change with age and educational background, highlighting the need for tailored approaches to integrate this technology in education, considering the varying needs and preferences among different age groups and educational backgrounds.

Furthermore, research by Ang et al. (2020) expands the understanding of this topic by exploring how social media and communication technology are used at various levels of education. This study provides comprehensive insights into the use of big educational data and its analytics. With the advancement of mobile devices and information and communication technology (ICT), there has been an increase in the volume and variety of data generated in the education sector. The study highlights various sources and platforms contributing to educational data, including Learning Management Systems (LMS), Massive Open Online Courses (MOOCs), Learning Object Repositories (LOR), OpenCourseWare (OCW), Open Educational Resources (OER), and social media. The research also addresses analytical challenges faced in managing this large educational data, including privacy and ethical issues. Utilizing technologies like Hadoop, Spark, and Samza, the study explores different technology architectures and analytical approaches used to process big educational data. These include predictive, collaborative, behavioral analytics, and personalized learning assessment. Research by Ang et al. (2020) indicates that the use of social media and communication technology in education is highly influenced by the students' educational level. This highlights the need for tailored approaches to integrate these technologies in education, considering the different needs and preferences among various educational levels

Both studies emphasize that the use of social media and communication technology in education is significantly influenced by age and educational background. The research conducted by Moodley (2019), and Ang et al. (2020) provides significant insights into this dynamic. Moodley's study highlights how adult learners adopt social media as an e-learning platform. The results indicate that adult learners may use social media in a more focused and directed manner compared to younger learners. The research by Ang et al. explores the use of big educational data and its analytics across different educational levels. This study reveals differences in the style and intensity of technology usage, and how factors like curriculum, educational needs, and technological readiness influence student interactions with social media and digital communication tools. Both studies emphasize that the use of social media and communication technology in education is significantly influenced by age and educational background. This suggests the need for tailored approaches to integrate these technologies in education, considering the different needs and preferences among various age groups and educational backgrounds. Therefore, it is important for educators and educational policy makers to consider these aspects in designing and implementing learning programs that utilize social media and communication technology.

### **Integration of social media and communication technology by teachers in teaching strategies**

The integration of social media and communication technology in teaching strategies by teachers is a critical aspect of modern education. Research by Gaceri et al. (2022), and Alotaibi et al. (2020) offers valuable insights into how social media can be integrated to

enhance collaboration in online learning. The research by Gaceri et al. (2022) highlights the importance of social media in supporting collaboration and student interaction in the context of online learning. By utilizing social media, teachers can enhance learning outcomes through improved collaboration and student interaction. The study indicates that incorporating social media into teaching strategies can facilitate more effective communication and richer interactions between students and teachers, as well as among students themselves. From a pedagogical perspective, the findings of Gaceri et al. (2022) suggest that the integration of social media into teaching strategies can enrich the learning experience by providing a platform for discussion, sharing resources, and group work. It also demonstrates that social media can be an effective tool for supporting student-centered learning and collaborative learning.

Siddig (2020) contributes further in this context by providing concrete examples of effective social media use in language teaching. Siddig's findings reveal that social media is not only useful in language learning contexts but can also be broadly applied across various disciplines. This demonstrates the flexibility and wide potential of social media applications in education, offering teachers various ways to utilize these platforms to improve student engagement and understanding. In the context of language teaching, the research shows that social media can be used to facilitate direct interaction with native speakers, allowing students to engage in more authentic language learning situations. Platforms like Facebook, WhatsApp, and YouTube can be used by instructors to help students access greater language competencies and improve their pronunciation and language comprehension. This indicates that social media can be a valuable tool in supporting student-centered and interactive language learning. The research by Siddig (2020) affirms that social media holds significant potential for application in language teaching, offering innovative and effective methods to enhance student engagement and language comprehension.

In their study, Al-Maatouk et al. (2020), and Fan et al. (2020) explain how teachers can adopt social media in education, focusing on technology acceptance and the alignment between tasks and technology. The study by Fan et al. (2020) explores the use of social media in emergency situations, specifically focusing on the automatic mapping of events and locations from social media. This research employs machine learning technology to identify and classify relevant information from social media. The research by Al-Maatouk et al. (2020) employed a questionnaire survey method based on the Task-Technology Fit (TTF) and Technology Acceptance Model (TAM), with the participation of 162 students who were already familiar with social media. The findings of the study show a significant relationship between the features of social media used for learning purposes and the enhancement of student satisfaction and performance. The research also discovered that a clear behavioral intention to use social media for learning purposes positively impacts academic achievement. This study underscores the importance of understanding and addressing the barriers that teachers might face in adopting social media, such as technical limitations or a lack of confidence in using new digital tools. By understanding these factors, teachers can be more effective in integrating social media into their teaching strategies. The research by Al-Maatouk et al. (2020) indicates that adopting social media in education requires a deep understanding of the technology's fit with learning tasks and the acceptance of the technology by educators. It emphasizes the importance of a tailored and informed approach in integrating social media into teaching practices.

The integration of social media and communication technology into teaching strategies by educators is a critical aspect of modern education, with great potential to enhance the quality and effectiveness of learning. Research conducted by Gaceri et al. (2022), Alotaibi et al. (2020), Siddig (2020), Al-Maatouk et al. (2020), and Fan et al. (2020) offers valuable insights into how social media can be utilized to enhance collaboration in online learning, provide concrete examples of effective use in language teaching, and explore technology acceptance by educators. Additionally, these studies demonstrate how social media can be leveraged for the automatic mapping of events and locations. By exploiting social media for collaboration, interaction, and richer learning experiences, educators can enrich students' learning experiences and facilitate more interactive and engaging learning approaches. Therefore, these studies underscore the importance of integrating social media and communication technology into teaching strategies, not just as a tool for enhancing student engagement and understanding, but also as a means to enrich the overall learning experience. This highlights the evolving role of technology in education and the need for educators to adapt and innovate in their teaching methodologies to meet the demands of the digital age.

### **Impact of social media and communication technology usage on student mental health and well-being**

The use of social media and communication technology has become an integral part of daily life, including in the context of education. However, its impact on student mental health and well-being requires special attention. Research by Atteh et al. (2020) indicates that the use of social media can have negative effects such as distractions or stressors affecting the mental well-being of students. Although the primary focus of the research is on academic performance, the implications for student mental health cannot be overlooked, particularly considering the stress that can result from disruptions in the learning process. This study also touches on aspects of student well-being by highlighting that the use of social media can lead to addiction and divert attention from educational activities, resulting in lower test scores and poor academic performance. The research reveals that excessive use of social media can have significant negative effects on academic performance and student mental health.

Research by Alghamdi et al. (2020) more directly addresses the impact of social media usage on student mental health, including the potential increase in mental health disorders such as depression. Alghamdi et al. (2020) study employs a machine learning approach to analyze posts on an Arabic psychology forum and predict symptoms of depression. This study demonstrates that analyzing social media posts can be a useful tool for identifying symptoms of depression among students. It underscores the importance of monitoring social media usage among students to detect and address potential mental health issues such as depression. The research by Araque and Iglesias (2020) explores how social media can affect the mental health and well-being of students through exposure to radical and extremist content. This study proposes a new approach for the detection of radicalization in social media, utilizing emotional signals and semantic similarity. It focuses on the analysis of emotional signals in social media networks, an aspect not extensively addressed before. The proposed method uses an emotion lexicon and an embedding-based semantic similarity model to identify radical content. The findings indicate that emotional signals can be reliable



indicators of radicalization, and the proposed feature extraction method yields high performance scores. This study demonstrates that emotion-based and semantic approaches can be employed to detect radicalization on social media. This is a crucial aspect in understanding the negative impact of social media on the mental health and well-being of students. It highlights the need for more sophisticated tools and methods to monitor and analyze social media content to protect vulnerable individuals from the potentially harmful effects of radicalization.

Al-Rahmi et al. (2019) also add another important dimension by exploring the negative impacts of behaviors like cyber stalking and cyber bullying. The research conducted by Al-Rahmi et al. (2019) aims to bridge the gap in literature regarding the use of social media in learning collaboration and to explore its effects on student performance through the lens of cyberstalking (CS) and cyberbullying (CB). The primary method of data collection was a questionnaire distributed to 538 university students. The findings of this research were obtained through quantitative research methods and structural equation modeling. A significant relationship was found between the perceived usefulness, ease of use, and enjoyment of using social media for open learning. However, the negative impacts of CS and CB were considered as factors that dampen these benefits. The research also reported that student performance can be negatively affected by CS and CB. The study by Al-Rahmi et al. (2019) indicates that behaviors such as cyberstalking and cyberbullying in the context of social media can have a significant negative impact on the mental health and well-being of students, as well as on their academic performance. This underscores the importance of addressing and mitigating these risks in educational settings where social media is used. Educators and policy makers need to be aware of these potential negative outcomes and implement strategies to protect students from such harmful online behaviors, ensuring a safe and supportive learning environment.

Research by Aldera et al. (2021) reveals an understanding of how negative and extremist content on social media can be identified, which is crucial for comprehending the potential negative impact of social media on students' mental health and well-being. This study conducts a systematic review of the existing literature on online extremism detection in text content. Focusing on social media networks like Twitter, Facebook, YouTube, blogs, and discussion forums, the research explores how extremist groups use social media to spread radical ideologies and propaganda. It highlights the importance of identifying extremist content and social profiles as a top priority for counter-terrorism agencies, technology companies, and governments. The findings reveal challenges, technical errors, and opportunities in previous studies that can be expanded and improved to yield more meaningful results. The study emphasizes the need for new research directions in online extremism detection and offers critical analysis in this emerging research area. The research by Aldera et al. (2021) underscores the importance of detecting negative and extremist content on social media to understand its impact on the mental health and well-being of students. It indicates the necessity for better and more informed approaches in monitoring and intervening in students' social media use. This highlights the role of proactive measures in ensuring a safe digital environment for students, where their exposure to harmful content is minimized, and their mental health and well-being are safeguarded.

The use of social media and communication technology has become an integral part of everyday life, including in the context of education. However, its impact on the mental

health and well-being of students requires special attention. Various studies mentioned above indicate that social media use can have negative effects such as distraction, stress, cyberstalking, cyberbullying, and exposure to negative or extremist content, all of which can affect students' mental health. While social media and communication technology offer numerous benefits in education, their impact on the mental health and well-being of students should be taken seriously. These studies highlight the need for better monitoring and intervention in the use of social media among students to ensure that its influence supports the positive development of mental health and well-being. A holistic approach that considers both the positive aspects and potential risks of social media is crucial in supporting students' health and well-being in today's educational environment. This underscores the importance of a balanced and informed strategy in integrating social media into education, emphasizing the need for measures that protect students' mental health while leveraging the educational benefits of these technologies.

## CONCLUSION

This article highlights the significant impact of social media and communication technology on education. While social media and communication technologies offer innovative ways to engage students and enhance learning, they also pose challenges, including potential disruptions and risks to mental well-being. Effective integration requires a balance of mindful educational benefits. Educators should foster an environment where technology is used responsibly and creatively, ensuring it contributes positively to the educational experience. This approach will help harness the full potential of digital tools in education, preparing students for a world integrated with technology.

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