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Social Media Impact on Students' Academic Performance: A Bibliometric Analysis

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ABSTRACT: The rapid expansion of social media has significantly transformed student learning, communication, and academic engagement worldwide. This study presents a comprehensive bibliometric analysis of research published between 2011 and 2025 to map publication trends, thematic evolution, collaboration networks, theoretical orientations, and geographic distribution in the domain of social media and student academic performance. Selected publications were analyzed using bibliometric techniques supported by VOS-viewer and MS Excel. The findings reveal a substantial rise in research output after 2017, indicating growing global scholarly interest. Major contributions originate from India, Malaysia, China, Saudi Arabia, the United States, and several developing regions, although geographic concentration remains prominent in South and Southeast Asia. Thematic clustering identifies three dominant research directions: (i) educational integration of platforms such as Facebook, WhatsApp, and Instagram to enhance collaboration and peer–teacher interaction; (ii) problematic or addictive usage patterns associated with distraction, multitasking, and psychological strain; and (iii) academic performance outcomes influenced more by purpose and intensity of use than demographic factors. Keyword co-occurrence analysis demonstrates strong conceptual cohesion around academic performance, while methodological review shows dominance of cross-sectional designs, highlighting the need for longitudinal and intervention-based studies. Overall, the findings suggest that social media's academic impact is context-dependent—beneficial when strategically integrated into learning environments yet detrimental when usage becomes excessive or unregulated. The study provides evidence-based insights for researchers, educators, and policymakers seeking to optimize the educational benefits of social media while mitigating associated risks.

KEYWORDS: Social Media; Academic Performance; Bibliometric Analysis; Student Engagement; Digital Learning

I. INTRODUCTION

The increasing use of social media has significantly transformed how students communicate, collaborate, participate, and interact in academic activities. Platforms such as Facebook, Instagram, WhatsApp, YouTube, and Twitter have now become an integral part of students' daily lives and daily routine, influencing their learning behaviors, study habits, and overall academic experience. As educational systems increasingly integrate digital technologies, understanding the academic implications of social media has become a critical area of research.

Research suggests that structured and purposeful use of social media can enhance collaborative learning, strengthen peer–teacher interaction, promote knowledge sharing, and expand learning opportunities beyond traditional classroom setting boundaries. Conversely, unregulated or excessive use is associated with challenges including distraction, reduced study time, multitasking, sleep disturbances, emotional instability, and declining academic writing quality due to the influence of informal digital language. Additional concerns such as privacy risks, cyber plagiarism, and addictive usage patterns further underscore the complexity of social media engagement.

These contrasting outcomes indicate that the academic impact of social media is shaped by factors such as time management, purpose of use, emotional intelligence, digital literacy, and self-regulation. In this context, bibliometric analysis provides valuable insights into influential contributors, publication trends, and emerging thematic patterns. The present study offers a comprehensive bibliometric assessment of literature on social media and academic performance of a selected dataset spanning from 2011 to 2025. Overall, this study contributes evidence of structured insight for educators and policymakers in promoting responsible and academically beneficial use of social media.

II. LITERATURE REVIEW

Digital communication and the usage of social media exert a significant influence on the academic performance of students, writing styles, and learning experiences. Studies highlight both beneficial and detrimental outcomes, emphasizing the dual nature of these technologies. The existing literature includes key research areas: social media usage as a tool, its impact on academic performance, behavioral and psychological impacts, risks and challenges, and emerging trends pertaining to digital concern.

A. Social-Media as a Learning Tool

1) Educational Enhancement: Mosharrafa et al. (2024) demonstrated that platforms such as blogs, wikis, and podcasts enhance learning by promoting reflection, creativity, and student engagement, facilitating collaborative learning and interaction between educators and learners.

2) Knowledge-Sharing: Artsin et al. (2024) emphasized the knowledge-sharing benefits of social media, enabling students to access diverse learning resources and participate in interactive academic environments.

3) Web-Based Platforms: Arif et al. (2024) further referred to social media as Web 2.0–based platforms that support communication, collaboration, and information exchange within educational environments.

B. Academic Performance Outcomes

1) Negative Writing Impacts: Fahad (2025) observed that the overuse of informal digital language negatively affects students' academic writing style, leading to grammatical errors and reduced adaptability to formal academic standards. Habes et al. (2018) also observed that students often transfer informal communication styles into academic work, weakening language accuracy.

2) Knowledge Dissemination: Conversely, some studies indicate positive outcomes when social media is used purposefully, enhancing academic engagement and facilitating knowledge acquisition. Rithika and Selvaraj (2013) highlighted social media's role in knowledge dissemination, while also cautioning against misuse that may affect academic focus.

C. Behavioral, Psychological, and Risk Factors

1) Psychological Consequences: Rahman et al. (2024) emphasized the importance of balanced and responsible usage, noting improper use can lead to adverse outcomes. Abdullahi et al. (2024) reinforced the dualistic nature of social media, identifying addiction, distraction, and reduced attention spans as negative influences on academic performance.

2) Digital Concerns: Artsin et al. (2024) and Rithika and Selvaraj (2013) highlighted privacy risks, cyber plagiarism, cyberbullying, and off-topic engagement as major obstacles requiring structured guidance in educational settings.

3) Emerging Trends: Yu et al. (2022) mapped research trends and influential contributors, highlighting increasing integration, while Mushtaq (2018) examined changing media consumption patterns noting both positive peer support and negative shifts away from traditional resources.

III. RESEARCH METHODOLOGY

The bibliometric dataset of 56 research papers was compiled through systematic online searches of academic literature available in major search platforms and journal websites, primarily Google Scholar and publisher databases. A structured keyword search strategy was employed using combinations of the terms "social media," "academic performance," "student achievement," "social networking sites," "student engagement," "education," and "bibliometric analysis."

The search was restricted to English-language publications published between 2011 and 2025. The dataset includes peer-reviewed journal articles, bibliometric studies, systematic reviews, and selected academic publications that investigate the relationship between social media usage and academic performance. Publications such as editorials, book chapters, conference abstracts without full text, non-academic sources, and duplicate records were excluded.

After screening and eligibility assessment, a final dataset of 56 publications was retained for bibliometric mapping using VOS-viewer, while descriptive statistical analysis and visualization were conducted using MS Excel.

Systematic searches were conducted using Google Scholar and academic journal websites. It provided access to both indexed and open-access scholarly literature, that was to use to compiled the dataset. The selected publications include studies published across journals available on platforms such as Science-Direct (Elsevier), Springer Link, Sage Journals, and other academic publisher databases, as per accessibility.

This enabled a broad and inclusive coverage of global research papers, particularly capturing contributions from developing and different regions that may be under represented in subscription-based databases. Therefore, the dataset is a mix of indexed and non-indexed journal publications, including peer-reviewed articles, bibliometric studies, and systematic reviews.

TABLE I. DATA SET CLASSIFICATION

Category	Sources /Journals	No. of Papers	Percentage (%)	Remarks
Scopus Indexed Journals	Computers in Human Behavior, Education and Information Technologies, Frontiers in Psychology, Frontiers in Psychiatry, Medical Journal Armed Forces India, Health Promotion International, Journal of Affective Disorders Reports and Social Sciences & Humanities Open	~9	~16%	High-quality, peer reviewed indexed journals
Other Reputed Indexed Journals	DESIDOC Journal; I JIM; Turkish Online Journal of Distance Education; Journal of Information Technology Education; Health Science Reports; Bulletin of Business and Economics; Journal of Community Medicine & Public Health Reports	~18–20	~34%	Recognized indexed journals
Non-Indexed/ Open Access/ Regional	IJCRT, IJARIIT, IJFMR, IJRISS; Zenodo; Research Gate; Institutional repositories; Conference papers	~27–29	50%	Open-access and regional publications
Total		56	100%	Final dataset

[**Source:** Compiled by the authors]

IV. RESULTS AND DISCUSSION

A. Publication Trends

The annual publication trend illustrates the temporal evolution of research examining social media and students' academic performance within the selected dataset (2011–2025). The earliest study identified in the dataset appeared in 2011. Between 2012 and 2022, research output remained relatively stable, generally ranging between one to three publications per year. A notable acceleration in publication activity becomes evident after 2022, culminating in a peak in 2024, indicating rapid digitalization following the COVID-19 pandemic.

A notable acceleration in publication activity becomes evident after 2022, culminating a peak in 2024, with approximately 13 publications. This indicates a rapid digitalization of education and increased reliance on online communication platforms during and following the COVID-19 pandemic.

Although a slight decline is observed in 2025, publication levels remain significantly higher than those recorded during the earlier years of the dataset. This pattern suggests that the research area has progressed from a nascent and exploratory field to a rapidly growing and consolidated domain of academic inquiry.

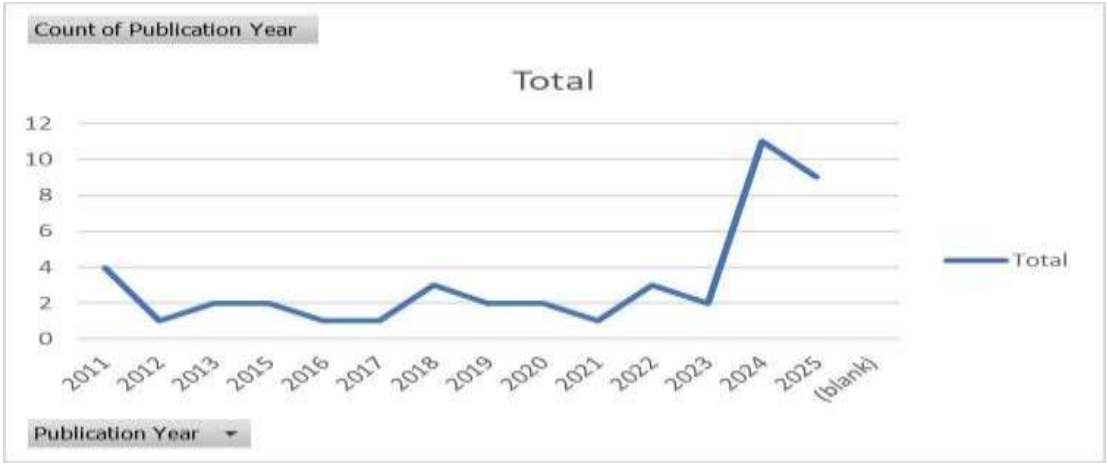


Fig 1: Year-wise distribution of publications over time

B. Citation and Author Analysis

Total citation analysis indicates a significant peak in 2012, highlighting the strong influence of early foundational studies. Citation-per-year analysis shows a transition from high citation intensity in the early phase to a more stable and consistent distribution in later years. Author-wise citation analysis indicates an uneven distribution where early contributors like Junco (2012) account for high citation counts, alongside notable contributions from Lau (2017) and 0Kalpidou et al. (2011).

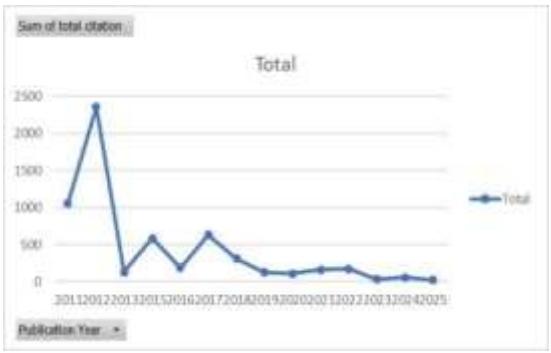


Fig 2: Total Citations

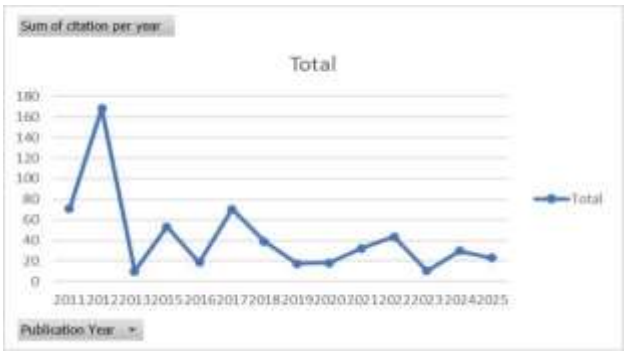


Fig.3: Average Citations per Year

The citation-per-year analysis (Fig 3) further supports the same pattern, showing a transition from high citation intensity in the early phase to a more stable and consistent citation distribution in later years. This suggests that the field has matured, with research contributions becoming more evenly distributed.

Author-wise citation analysis (Fig 4) indicates an uneven distribution of citations, where a few authors—particularly early contributors such as Junco (2012)—accountforadisproportionatelyhighnumberofcitationsascomparedtoother authors. Other authors, including Lau (2017) and Kalpidou et al (2011), demonstrates notable impact. However, the majority of authors show moderate to low citation counts.

Overall, research output has increased over time, but citation impact is still concentrated among a few early studies and key authors. This means the field has expanded with more studies being published and citations spread across a larger number of papers.

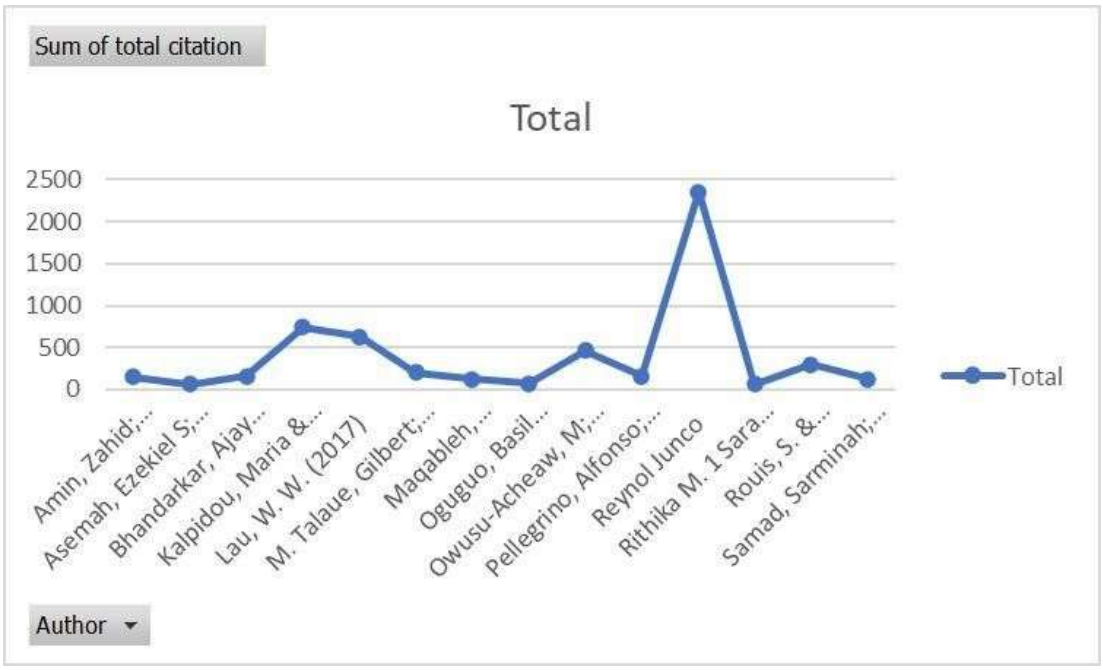


Fig 4: Distribution of Citations across Authors

C. Thematic and Network Analysis

The figure shows the co-occurrence relationships among key terms, showing a single cohesive cluster centered on social media and its academic implications. (Figure-5)

The keyword co-occurrence analysis (minimum occurrence threshold = 3) yielded a single cohesive cluster comprising strongly interconnected terms. This structure indicates a high degree of conceptual integration within the research domain rather than fragmentation into multiple thematic clusters.

The term "social medium" occupies the central position, exhibiting the highest connectivity. Its prominence confirms that the literature is primarily organized around investigations of social media usage and its implications on education.

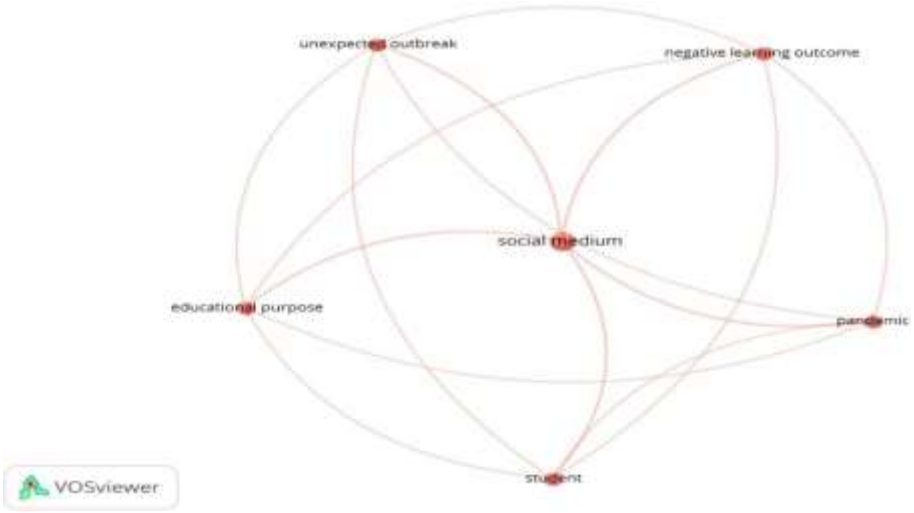


Fig 5: Thematic Cluster Analysis

Overall, the cluster reflects three conceptual dimensions:

First, the educational impact dimension, represented by terms such as 'student' and educational purpose', highlights the dominant focus on learning processes and academic engagement.

Second, the outcome evaluation dimension, indicated by 'negative learning outcome', reflects continued attention toward both beneficial and adverse academic effects.

Third, the contextual (pandemic) dimension, represented by 'pandemic' and 'unexpected outbreak', reflects the influence of COVID-19 in shaping research priorities.

The consolidation of these themes within a single cluster suggests that pandemic-related research has been integrated into the broader discourse on educational performance rather than emerging as a separate research stream. In addition, platform-oriented keywords suggest growing research emphasis on widely adopted applications such as Facebook, WhatsApp, Instagram, and YouTube.

Overall, the single-cluster configuration demonstrates that research on social media and academic performance remains conceptually concentrated and structurally unified, with interconnections among the key themes.

D. Term Co-occurrence Analysis

In order to identify the most structurally dominant conceptual elements within dataset, a higher minimum occurrence threshold (minimum =10) was applied in the VOS viewer text mining analysis. This restrictive criterion ensured that only highly recurrent and conceptually central terms were retained for network visualization.

The resulting co-occurrence network consists of a set of strongly interconnected 6core terms, with 'social medium' emerging as the most prominent and centrally positioned node. Its strong linkages with terms such as 'student,' 'educational purpose,' 'education,' and 'negative learning outcome' indicate that the literature is primarily organized around examining the academic implications of social media usage.

The presence of terms such as 'pandemic,' 'COVID,' and 'unexpected outbreak' highlights the significant

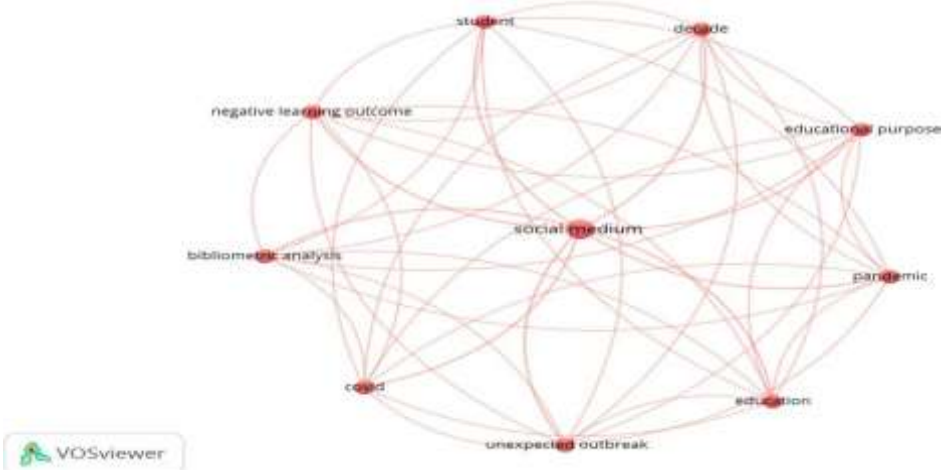


Fig. 6: Term Co-occurrence using Text-mining Approach

contextual influence of COVID-19 on the research landscape. Their strong connections with the central node suggest that crisis-driven digital transformation played a key role in shaping recent scholarly investigations.

The circular and highly interconnected structure of the network reflects a conceptually cohesive research field, rather than a fragmented or highly specialized one. The dominance of educational and pandemic-related terms further indicates that the literature remains focused on evaluating social media's academic impact within institutional learning environments, particularly during periods of accelerated digital adaptation.

E. Overlay Visualization

The overlay visualization provides temporal insights into the evolution of research themes within the dataset. By applying a minimum occurrence threshold often, only the most frequently recurring terms were retained, representing the conceptual core structure of the research field.

The visualization reveals that foundational terms such as 'social medium' and 'student' appear consistently central across the study period, indicating its enduring importance within the literature. In contrast, terms such as 'pandemic' 'COVID' and 'unexpected outbreak' appears toward the more recent end of the overlay spectrum, suggesting a notable increase in research attention during the COVID-19 phase.

This temporal differentiation reflects a clear shift in scholarly focus from general examinations of social media's role in educational implications toward investigations shaped by crisis-driven digital transformation and remote learning adaptation and environment. The overlay pattern suggest that the pandemic acted as significant catalyst, intensifying and reorienting research on social media and academic performance.

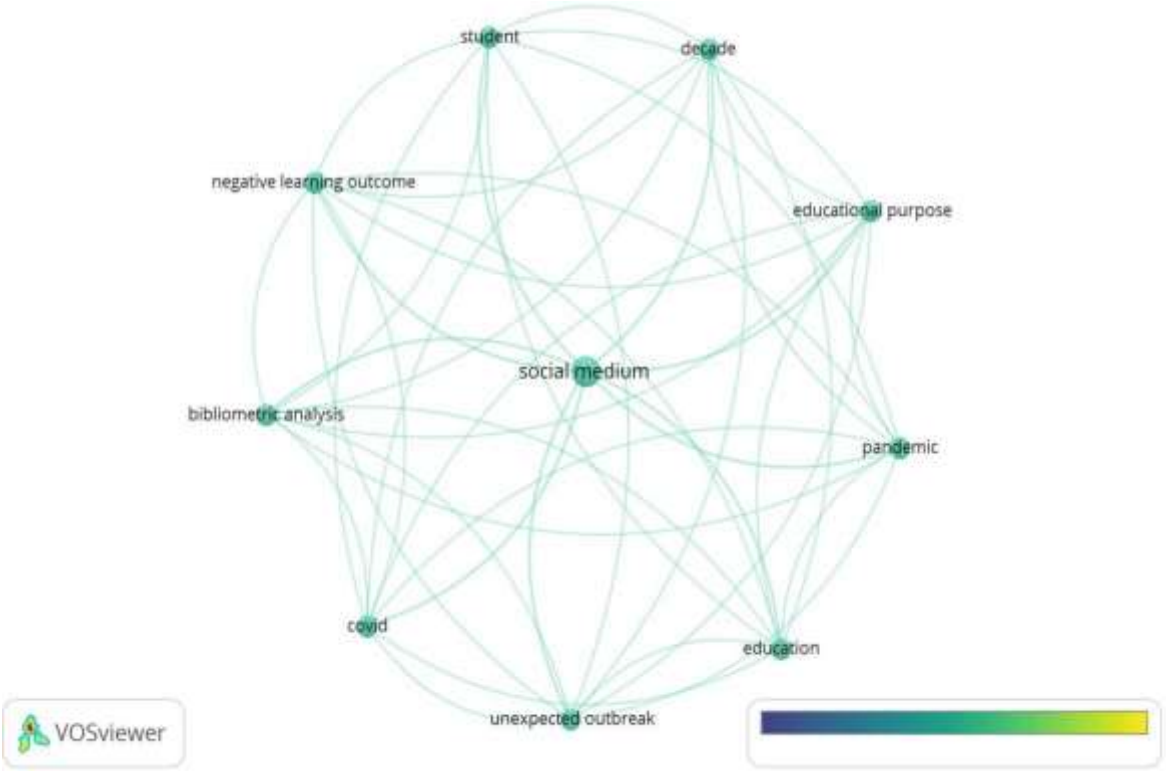


Fig. 9: Overlay Visualization of Core Themes

Overall, the overlay analysis demonstrates both, conceptual continuity reflecting education-centered themes, and contextual evolution driven by pandemic-related research concerns. These findings highlight the adaptive responsiveness to global educational disruptions and its ability to adapt to emerging educational challenges.

F. Density Visualization

The density visualization highlights areas of highest research concentration within the conceptual network. With the high occurrence threshold (minimum=10), the density map reveals that 'social medium' and 'student' form the most intense regions, indicating a strong scholarly emphasis on the relationship between social media use and student academic results.

Moderate density is observed around 'educational purpose' and 'negative learning outcome,' reflecting sustained attention to both positive and negative academic implications.

Lower but distinct density zones linked to 'pandemic' and 'unexpected COVID outbreak' reflect the emergence of crisis-context research, during the COVID-19 period. These themes demonstrate clear integration into the broader academic discourse.

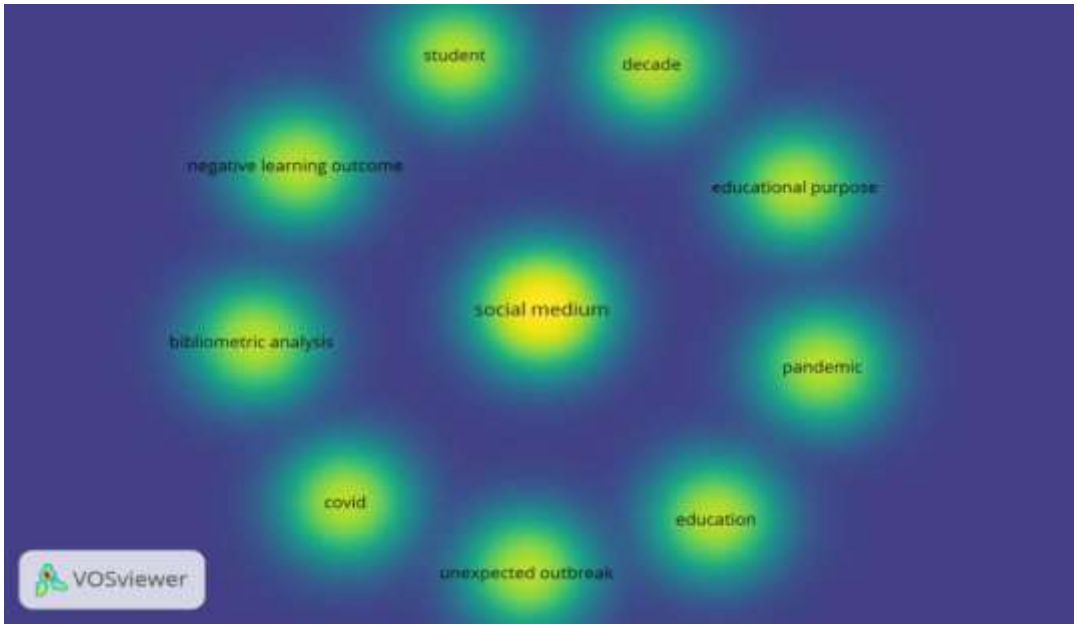


Fig. 8: Density Visualization

Overall, the density structure indicates a conceptually concentrated rather than highly fragmented, wherein core education themes dominate. The contextual influences such as the pandemic related topic acts as catalyst rather than separate research themes.

G. Co-authorship Analysis

The co-authorship network analysis was conducted using the full counting method in VOS viewer. Given the limited dataset (n ≈ 50), a minimum document threshold of one was applied to include all contributing authors.

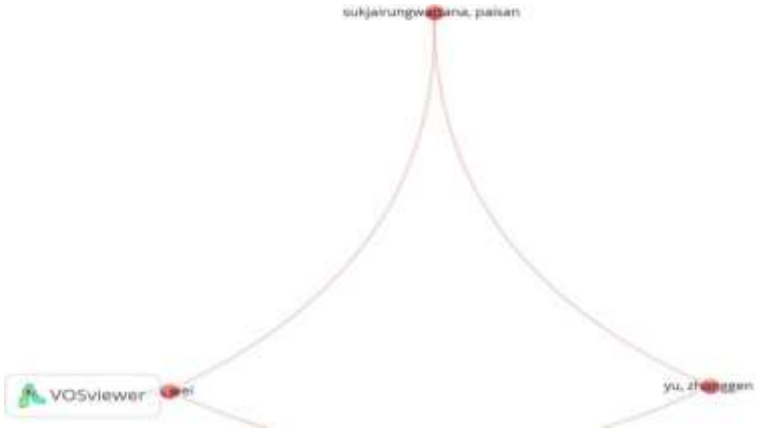


Fig. 9: Co-authorship Analysis

The network reveals a sparse collaboration structure. Only three authors — Yu, Zhonggen; Sukjairungwattana, Paisan; and Xu, Wei—forming a measurable co-authorship cluster, connected through direct collaborative linkages. This forms a triangular network, indicating limited existing collaboration.

The absence of additional clusters indicates that research is largely decentralized, with most authors appearing only once within the dataset. This pattern indicates a predominance of independent scholarly contributions rather than sustained collaborative partnerships. Such dispersion may reflect the globally distributed nature of the research domain wherein the topic attracts contributions from diverse geographic regions.

Overall, the findings highlight low author level cohesion, reflecting a broadly distributed collaborative research development has progressed.

H. Geographic and Collaborative Networks:

The country-wise distribution as illustrated in fig10 reveals an uneven pattern of research contributions within the selected dataset. India emerges as the most prominent contributor, followed by Malaysia and Pakistan, indicating strong scholarly engagement of the topic social media and students' academic performance in South and Southeast Asia. China and Bangladesh demonstrate moderate representation, while other most other countries reflect lower research intensity.

The pattern is supported further by the distribution presented in fig. 11, which shows that a major study accounted from Asia. On the contrary, Africa, Europe, and the USA contribute significantly fewer studies, indicating imbalance in global research participation.

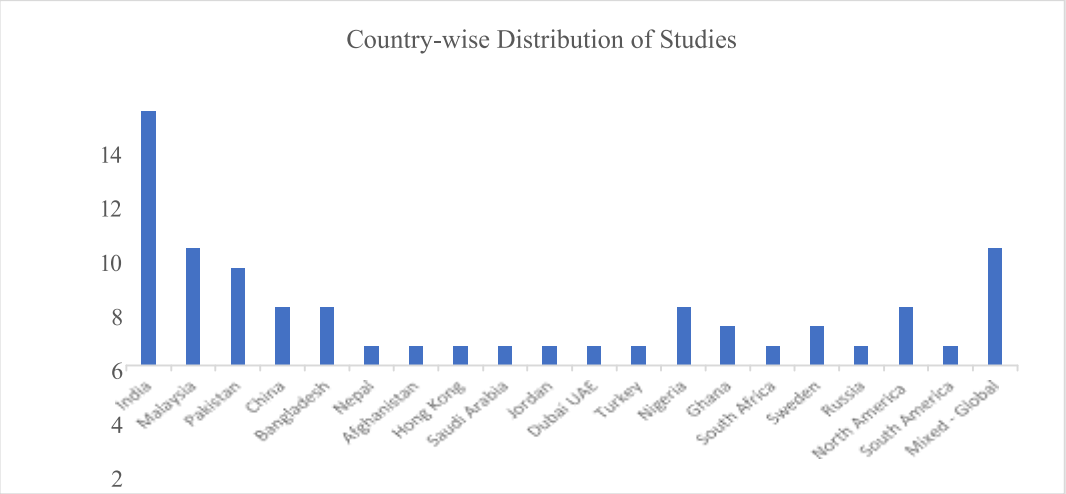


Fig. 10: Country-wise Distribution of the Studies

Beyond publication counts, the analysis indicates that the United States, China, Saudi Arabia, and Malaysia emerge as influential contributors, in terms of research visibility, citation impact, and collaborative linkages. Notably, international collaborations such as Malaysia-Indonesia, Malaysia-UAE-Thailand- India highlight an emerging trend of cross-national research partnerships within Asian countries.

Furthermore, several studies are context-specific, focusing on localized educational environments in countries such as Pakistan, Nigeria, and Nepal. The localized investigations emphasize the impact of social media on the academic performance which is influenced by socio-cultural and institutional contexts, which may limit the generalizability of findings across regions.

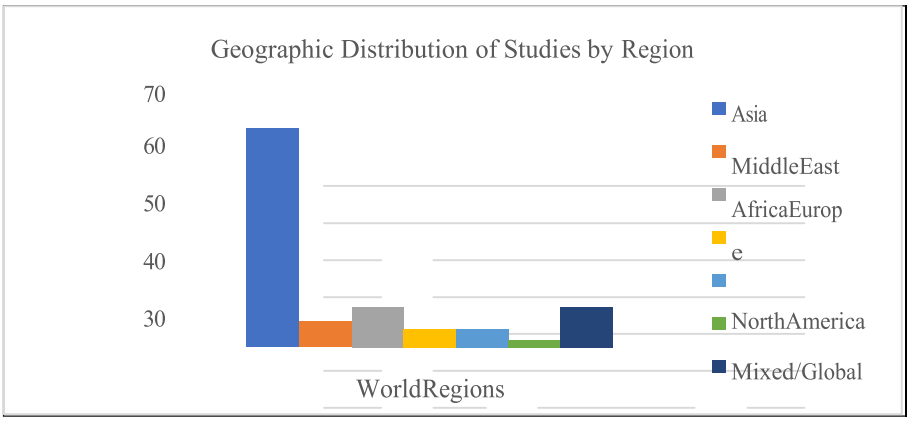


Fig. 11: Geographic Distribution of Studies by Region

Overall, as evidenced in Fig.10 and 11, research is heavily concentrated in South and Southeast Asia, with notable contributions from countries such as the United States, China, and Saudi Arabia. This imbalance indicates limited global representation and underscores the need for broader international participation and stronger collaborative integration to enhance the generalizability of future research.

V. LIMITATIONS AND AREAS OF FUTURE RESEARCH

The study is based on a limited dataset (56 papers) from selected indexed sources, which may exclude relevant studies from non-indexed and regional publications. Therefore, it has several limitations as listed below:

- The moderate sample size restricts the depth of bibliometric mapping and network analysis.
- Geographic representation is uneven, with a strong concentration in South and Southeast Asia, limiting global generalizability.

- The dominance of cross-sectional studies limits comparability and causal interpretation of the relationship between social media use and academic performance.
- The use of bibliometric analysis tools (VOS-viewer and MS-Excel) focuses on keyword patterns and may not capture deeper conceptual relationships.
- The long-term applicability of the platform specific findings may get affected by continuous evolution of social media platforms.

Future research should include larger and more diverse datasets, incorporating longitudinal and experimental designs, platform-specific effects (e.g., WhatsApp, Instagram), and psychological factors (e.g., digital addiction, self-regulation).

VI. CONCLUSION

This study provides a comprehensive bibliometric analysis of research on social media and students' academic performance from the period of 2011–2025, highlighting key trends, thematic structures, and research patterns. The findings significantly indicate growth in scholarly interest particularly after 2017, reflecting the increasing integration of social media into educational environments. A central theme across the literature is the dualistic nature of social media: while it enhances collaborative learning, student engagement, and access to academic resources, excessive or unregulated use is associated with distraction, reduced study time, and lower academic performance. The findings provide valuable insights for researchers, educators, and policymakers to promote balanced, responsible, and academically beneficial use of social media, while guiding future research toward more diverse and longitudinal studies.

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