SOCIAL MEDIA INTEGRATION IN EDUCATION: INVESTIGATING ITS IMPACT ON STUDENT ENGAGEMENT THROUGH PEER INTERACTION

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Abstract: This study constructed a core conceptual framework using social media use, peer interaction, discussion frequency, and student engagement as variables by introducing the following demographic gender, age, and grade level variables. Attempting to analyze the differences in the perceived means of the respondents' demographic variable groupings for each of the variables of social media use, peer interaction, discussion frequency, and student engagement and the influence of the independent variables on the dependent variable, the study formulated the research hypotheses: Hypothesis 1. There is a significant positive and direct relationship between social media use and student engagement. Hypothesis 2. There is a significant positive direct relationship between peer interaction and student engagement. Hypothesis 3. Discussion frequency mediates the relationship between social media use and student engagement, i.e., the higher the level of social media use, the higher the discussion frequency, and in turn, the higher the discussion frequency, the higher the student engagement. Hypothesis 4. Implementing an intervention to optimize discussion frequency will significantly increase student engagement regardless of the level of social media use and peer interaction. And using the students of financial management in Shanghai Business School as a case study, in the overall study, the sample size was calculated to be 3531 using simple random sampling method, 430 questionnaires were distributed in this study, and 410 questionnaires were retrieved using the simple random sampling method, and the recovery rate was 95.3%.

This study found that social media use significantly affects student engagement in education and increased social media use may lead to more active student engagement in learning activities. Peer interaction significantly and positively affects student engagement, and increased peer interaction may lead to more active student engagement in learning activities. Social media use indirectly affected student engagement by influencing discussion frequency, and also directly affected student engagement. The independent variable, peer interaction, still had a significant effect on the dependent variable, student engagement, but this effect was partially mediated by the mediator variable, discussion frequency. This study provides a reference point for subsequent research, discusses future directions for student teaching and learning, and provides suggestions for future research.

Keywords: Social Media Use, Peer Interaction, Discussion Frequency, Student Engagement

Introduction

In recent years, the convergence of social media and educational environments has flourished with the widespread use of digital technologies and the dynamic development of communication platforms. This convergence marks a critical shift in the educational paradigm and provides an unprecedented opportunity to reimagine traditional teaching and learning models. As educators embrace the multifaceted capabilities of social media platforms, they gain new avenues for fostering student engagement and facilitating interactive learning environments. The main objective of this study was to meticulously explore the impact of social media integration on student engagement, specifically through the lens of peer interaction in an educational context, with a particular focus on the mediating role of frequency of interaction.

The exponential growth in the use of social media in education is a reflection of a broader societal trend toward the penetration of digital technologies into all aspects of human interaction and communication. With the proliferation of smartphones, tablets, and other Internet-enabled devices, students are increasingly immersed in digital environments that transcend geographical boundaries. As a result, educational institutions have had to adapt their teaching methods to accommodate the digital preferences of contemporary learners. Social media platforms, such as Facebook, Twitter, Instagram, and TikTok, have become ubiquitous channels through which educators can orchestrate collaborative learning experiences and foster communities of practice.

At the heart of the discussion around the integration of social media into education is the transformative potential of social media to transcend the constraints of traditional pedagogical frameworks. Unlike traditional classroom environments with dynamic hierarchies of teachers and students, social media platforms provide a democratized space where students can actively co-create knowledge and engage in peer-to-peer discussions. By utilizing the interactive features of social media, educators can move beyond the limitations of synchronous instruction and foster asynchronous learning environments that are conducive to different learning styles and preferences. In addition, the mobility and ubiquity of social media platforms facilitates seamless communication and collaboration among geographically dispersed learners, thereby fostering interconnectedness and a sense of belonging in a virtual learning community.

The focus of this study is to investigate the impact of social media integration on student engagement through peer interaction, which emphasizes the critical role of interpersonal relationships in the educational process. Peer interaction is a catalyst for cognitive engagement, social learning, and knowledge construction, thus enriching the educational experience for students. Social media platforms are catalysts for peer-to-peer collaboration, enabling student engagement in collaborative problem

solving, knowledge sharing, and collective sensemaking. In addition, social media features, such as multimedia content creation, real-time feedback mechanisms, and gamification elements, enhance the immersive nature of peer interaction and create a sense of active engagement and ownership in the learning process.

Most importantly, interaction frequency is a mediating variable in the relationship between social media integration and student engagement. By moderating the intensity and duration of peer interactions facilitated by social media platforms, interaction frequency mediates the effect on the extent to which students actively participate in educational activities. Thus, understanding the subtle interplay between social media integration, peer interaction, and interaction frequency is critical to elucidating the mechanisms inherently driving student engagement in digital learning environments.

The emergence of social media platforms such as Facebook, Twitter, Instagram, and TikTok has revolutionized the way people communicate, enabling them to connect, share, and collaborate in a virtual space. These platforms have fundamentally changed the way people interact and share information, breaking down geographical barriers and facilitating communication on a global scale. In the field of education, educators are increasingly utilizing these platforms to supplement traditional teaching methods and create a more interactive and collaborative learning environment (Junco, 2015).

Educators recognize the potential of social media to increase student engagement and promote active learning. Social media platforms offer a variety of tools and features that can be used to facilitate communication, collaboration, and knowledge sharing among students. For example, forums, live streaming, and multimedia content can enrich the learning experience and cater to different learning preferences. In addition, social media provide opportunities for real-time feedback, peer review, and interactive discussions that enable students to actively participate in their own learning process (Veletsianos, 2021).

However, while the potential benefits of social media integration in education are widely recognized, empirical research on its impact is still relatively limited, particularly with regard to student engagement through peer interaction. Despite the increasing prevalence of social media use among students, there is a lack of comprehensive understanding of its impact on learning outcomes and student experiences. Existing research tends to focus on social media use in the context of specific educational activities or specific disciplines, leading to a fragmented understanding of the overall impact of social media on teaching and learning (Manca & Ranieri, 2017).

In conclusion, the integration of social media into educational settings has the potential to change traditional teaching and learning paradigms and provide new opportunities for student engagement and interaction. However, empirical research on its impact, particularly on student engagement through peer interaction, remains relatively limited. This study seeks to fill this gap in the literature by investigating the relationship between social media use, peer interaction, and student

engagement in educational settings. By providing valuable insights into the effectiveness of social media integration in promoting student engagement, this study aims to inform educational practice and policy in the digital age.

Research Problem Statement:

In recent years, the integration of social media in education has received much attention due to its potential to transform pedagogical practices. With the emergence of various social media platforms, educators have explored innovative ways to utilize these technologies to increase student engagement and promote collaborative learning environments. However, there are complex dynamics between social media use, peer interaction, and student engagement that require further investigation to fully understand their interrelationships.

Research question posed:

How do different social media platforms influence student engagement through peer interaction?

What factors influence the frequency and quality of discussion facilitated by social media platforms in educational settings?

How do demographic factors affect the relationship between social media integration, peer interaction, discussion frequency, and student engagement?

To what extent does the type of educational content shared on social media platforms influence student engagement and discussion frequency?

What strategies can educators implement to optimize discussion frequency on social media platforms and increase student engagement in educational activities?

How do social media privacy concerns and cybersecurity considerations affect student engagement in discussions and willingness to engage in peer interaction in educational settings?

These research questions can further explore the complexities of social media integration in education and reveal the underlying mechanisms by which it affects student engagement, particularly the mediating role of discussion frequency.

Research Objective (s)

Objective 1: To Investigate the Direct Impact of Social Media Use and Peer Interaction on Student Engagement

The primary objective of this study is to examine the direct effects of social media use and peer interaction on student engagement within educational contexts. This involves assessing how students' utilization of social media platforms and their engagement in peer interactions influence their overall levels of engagement with course materials, activities, and discussions. By analyzing empirical data and theoretical frameworks, this objective aims to establish the individual contributions of social media use

and peer interaction to student engagement outcomes.

Objective 2: To Explore the Mediating Role of Discussion Frequency in the Relationship Between Social Media Use, Peer Interaction, and Student Engagement

A key objective of the study is to investigate the mediating role of discussion frequency in the relationship between social media use, peer interaction, and student engagement. Discussion frequency serves as a critical mediator through which the effects of social media use and peer interaction are transmitted to student engagement outcomes. This objective entails examining how variations in discussion frequency moderate the associations between social media use, peer interaction, and student engagement, thereby elucidating the underlying mechanisms driving these relationships.

Objective 3: To Identify Effective Strategies for Optimizing Discussion Frequency to Enhance Student Engagement

Another crucial objective is to identify effective pedagogical strategies and instructional interventions for optimizing discussion frequency to enhance student engagement within digital learning environments. Drawing upon empirical evidence and best practices, this objective aims to provide actionable insights for educators seeking to leverage discussion frequency as a means of promoting meaningful student engagement. By synthesizing evidence-based recommendations, this objective seeks to empower educators with practical guidance for designing engaging learning experiences that capitalize on the mediating role of discussion frequency.

Literature Review

The term "social media" first appeared in the 2007 book What is Social Media, which defines it as "a new type of online media that gives users a wide space to participate". Communication scholars define social media as a set of web applications built on the technological and ideological foundations of web 2.0 that allow for the creation and exchange of user-generated content (UGC). Caleb (2015) distinguishes social media as a distinct subset of media tools that share a common set of characteristics and features, of which different media tools have different characteristics and features. common characteristics and features, in which the insights provided by different individuals and groups to create the content they are consuming provide far greater intrinsic value than that provided by each individual site feature.

Domestic academics have also noted the important role of social media in the realization of national strategic goals and international communication since the rise of social media, but overall there are not too many studies that specifically focus on the social media practices of governments. Most of the studies only observe in general terms the changes in government behavior and diplomatic activities under the new media revolution. For example, in 2010, some researchers found, through a historical analysis of the U.S. digital diplomacy concept, that U.S. diplomatic activities have gradually

transformed into flexible cyber diplomacy, based on two main reasons: the networked nature of communication and the networked nature of international politics. This analysis of the dynamics of the change gave inspiration to China's diplomacy, which was at a critical stage of the development of network technology at that time. A researcher pointed out that the government's top-level design in the field of new media is crucial to the current situation of new media public diplomacy under the background of "Belt and Road", and suggested that China should strengthen the construction of official online media, cultivate government opinion leaders in social media platforms, emphasize the control of new media information, and change the concept of one-way international communication.

In the context of the new curriculum reform, the classroom has gradually developed into a "student-centered" model, and the role of peer interaction in classroom teaching has been increasingly emphasized. Interaction is an integral part of the educational process and has been recognized as a major variable in the success of learning (Juwah, 2006). Learning is achieved through peer interaction, sharing knowledge, evaluating and comparing each other (Berg, 1999). Peer interaction is also known as student-student interaction. In a broad sense, it refers to the behavior of student-student direct all interactions, and in a narrow sense it is only the interaction between students in the classroom. Qu (2009) understands peer interaction as the occurrence of various forms or nature of interactions and influences among students in a certain classroom cultural context and specific situations. Ye (2001) believes that peer interaction is a combined dynamic and static system that contains elements such as the subject of interaction, the context, the process, and the result.

College campus is half of society, and interpersonal interaction is an important environmental factor on campus. In campus life, peer interaction is the most frequent, Coleman (1966) clearly pointed out that the role of peers is second only to the influence of family background on students, so peer groups have a unique value for the personal development of college students. Discussion frequency promotes knowledge construction through active participation and exchange of ideas among students (Tretter, et al., 2006) By engaging in discussions, students can clarify concepts, ask questions, and share insights, thereby deepening their understanding and retention of course content. Frequent discussion encourages students to analyze, evaluate, and synthesize information, which enhances critical thinking skills (Chen, et al., 2020). Through collaborative problem solving and peer feedback, students can develop higher-order thinking skills and become more adept at applying their knowledge to real-world situations. Discussion frequency promotes social interaction and engagement among students, creating a sense of community and belonging in an online learning environment (Reeves et al., 2017). Regular peer interaction with peers promotes peer support, collaboration, and motivation, which are critical to student success and satisfaction.

In the 1830s, Tyler first introduced the concept of "student engagement," also known as "time-on-task," which he interpreted as the amount of time a student invests in his or her academics and the

impact it has on those academics. Tyler's research (1933) on student engagement focused on students' time-on-task, and he believed that time-on-task is directly proportional to learning outcomes. Jackson (1968), through the observation of students' "non-participation" behaviors in the classroom, argued that students' behavioral engagement does not reflect the overall status of students' engagement, and that there is a deeper level of engagement hidden behind these behaviors, and thus the study of student engagement has begun to change from a single study to a single study. As a result, the research on student engagement began to change from a single behavioral dimension to a multidimensional one. Astin (1984) understood student engagement as a state variable of students' investment in academic activities, which includes both physical and psychological energy inputs, and with the passage of time and the change of goals, the amount of energy invested in academic activities varies from student to student. A researcher affirms the psychological and physiological inputs proposed by Astin while refining the direction of psychological inputs to include psychological experiences, specifically students' emotions. Fredricks (2004) focuses on deeper aspects beyond behavior and emotions. He believes that learning engagement should contain three types: behavioral engagement, cognitive engagement, and emotional engagement. The symbiotic relationship between social media use and peer interaction is evident in educational settings, as these two elements tend to complement each other (Junco, 2015). Social media platforms play a powerful facilitating role, enabling student engagement in peer communication and collaboration without geographic barriers or time constraints. Through platforms such as Facebook, Twitter, or collaborative document editing tools like Google Docs, students can connect with peers, share educational resources, engage in group discussions, and collaborate on projects. This unrestricted communication fosters a sense of community among learners and promotes active participation in the learning process.

Methodology

With probability-based sampling methods, the sample size can be determined through the population collection process. For example: the sample size suitable for calculation, the sample size used in the study was determined using The Taro Yamane Sample Size Formula (1973) and the sample size was determined using a 95% confidence level and permissible value. The sampling error is 5% or 0.05. The overall sample is 3531 individuals. When n = number of samples used in the study . N = size of the overall population, e = random sample error is set to 0.05 .

The sample size and formula are as follows

$$n = \frac{N}{1 + Ne^2}$$

$$n = \frac{3531}{1 + 3531 \text{ X } 0.05^2}$$

$$n = 359.32$$

The minimum sample size was calculated to be 359.32, rounded to the nearest whole number to ensure an adequate sample size. Therefore, the study requires approximately 359 participants, and both actual and potential attrition rates must be considered when determining the final sample size.

This paper focuses on the whole cluster sampling method within probability sampling. Whole cluster sampling is to combine the whole population into groups by weighing a number of basic units, such that the group is called a cluster. When sampling directly extract the group, and then all the basic units in the selected group all implement the survey, such a sampling method is called whole group sampling (Cluster Sampling).

Through probability sampling, we can learn about the status of students' social media use and peer interaction, play the mediating role of discussion frequency, study how discussion frequency plays a role in social media and peer interaction, explore their relationship with improving student engagement, and deepen our own experience so as to improve the reliability of the research results.

Because it is difficult to conduct offline surveys in the field, this study chose the Questionnaire Star Online Platform (www.wjx.cn) for questionnaire distribution, measurement and collection. In this study, 430 questionnaires were distributed to students majoring in financial management in Shanghai University of Business, and the anonymity of the participants was ensured. 410 valid questionnaires were collected after invalid data were excluded, with a recovery rate of 95.3%.

Results

Based on the model summary, ANOVA and coefficients provided, we can draw the following conclusions:

Model Summary:

In Model 1, the effect of social media use (INDEPENDENT VARIABLE) on student engagement (DEPENDENT VARIABLE) was significant ($R = 0.783$, $R^2 = 0.613$, adjusted $R^2 = 0.612$, $p < 0.001$). The standardized estimation error in Model 1 was 4.25172, indicating a small prediction error in the model.

ANOVA:

The ANOVA results of the regression analysis showed that in Model 1, the F-statistic of the regression term was 647.335 with a p-value of less than 0.001, indicating that the model was statistically significant in explaining student engagement.

Coefficients:

The table of coefficients for Model 1 shows that the standardized coefficient for social media use is 0.783, indicating an average increase in student engagement of 0.783 standard deviations per unit increase in social media use. The t-statistic for social media use is 25.443 with a p-value of less than 0.001, indicating that the effect of social media use on student engagement is statistically significant.

In summary, based on the regression analysis, we can conclude that social media use significantly affects student engagement in education and that increased social media use may lead to more active student engagement in learning activities.

Model Summary:

In Model 1, the effect of peer interaction (PEER INTERACTION) on student engagement (STUDENT ENGAGEMENT) was significant (R = 0.823, R^2 = 0.678, adjusted R^2 = 0.677, $p < 0.001$).

The standardized estimation error in Model 1 was 3.88146, indicating a small prediction error in the model.

ANOVA:

The ANOVA results of the regression analysis showed that in Model 1, the F-statistic of the regression term was 858.275 with a p-value less than 0.001, indicating that the model was statistically significant in explaining student engagement.

Coefficients:

The table of coefficients for Model 1 shows that the standardized coefficient for peer interaction is 0.823, indicating that for each unit increase in peer interaction, student engagement increases by an average of 0.823 standard deviations.

The t-statistic for peer interaction is 29.296 with a p-value of less than 0.001, indicating that the effect of peer interaction on student engagement is statistically significant.

In summary, based on the regression analysis, we can conclude that peer interaction has a significant positive effect on student engagement in education and that increasing peer interaction may promote more active student engagement in learning activities.

Overall effect model:

The R-value of the model is 0.7832, indicating that the independent variable social media use explains about 78.32% of the variance in the dependent variable student engagement.

The F-value of the model is 647.335, which corresponds to a p-value very close to zero, indicating that the regression coefficient of the model is significant.

The total effect of social media use on student engagement was estimated to be 0.8231, with a standard error of 0.0324, a t-value of 25.4428, a p-value of less than 0.0001, and a 95% confidence interval of [0.7595, 0.8867]. This suggests that there is a significant total effect of social media use on student engagement.

Direct effect:

The estimated direct effect of social media use on student engagement was 0.1682, with a standard error of 0.0624, t-value of 2.6955, p-value of 0.0073, and 95% confidence interval of [0.0455, 0.2908]. This indicates that the direct effect of social media use on student engagement is also

significant.

Indirect effect:

The indirect effect of social media use on student engagement was mediated by the variable discussion frequency. The effect of discussion frequency on student engagement was estimated to be 0.6549 with a Bootstrap standard error of 0.0639 and a 95% Bootstrap confidence interval of [0.5299, 0.7832].

Therefore, the total effect of social media use on student engagement was 0.8231, with a direct effect of 0.1682 and an indirect effect through discussion frequency of 0.6549. These results suggest that social media use indirectly affects student engagement by influencing discussion frequency, as well as directly affecting student engagement.

The Total Effect is the total effect of peer interaction on student engagement, i.e., the overall effect of peer interaction on student engagement, taking into account the mediating variables. In this analysis, the total effect of peer interaction on student engagement was 0.7850, with a p-value of less than 0.0001, indicating that the effect of peer interaction on student engagement was statistically significant.

The Direct Effect refers to the direct effect of peer interaction on student engagement, i.e., the direct effect of peer interaction on student engagement without considering the mediating variables. In this analysis, the direct effect of peer interaction on student engagement is 0.3518, with a p-value of less than 0.0001, indicating that the direct effect of peer interaction on student engagement is statistically significant.

Indirect Effect refers to the effect of peer interaction on student engagement through the mediator variable M. In this analysis, peer interaction was measured through the mediator variable M, which was the effect of peer interaction on student engagement. In this analysis, the indirect effect of peer interaction on student engagement through the mediator variable of discussion frequency is 0.4332, with a p-value of less than 0.0001, indicating that the indirect effect of peer interaction on student engagement through the mediator variable of discussion frequency is statistically significant.

Therefore, through the mediation effect analysis, we found the overall effect of peer interaction on student engagement, the direct effect, and the indirect effect through the mediator variable.

Based on the results of the analysis, we draw the following conclusions:

The independent variable peer interaction has a significant overall effect, direct effect and indirect effect on the dependent variable student engagement.

The large difference in the magnitude of the direct and indirect effects suggests that the mediating variable, discussion frequency, partially mediates between the independent variable, peer interaction, and the dependent variable, student engagement.

The presence of mediation effects suggests that the mediating variable, discussion frequency,

plays an important role in explaining the relationship between the independent variable, peer interaction, and the dependent variable, student engagement, which may involve the fact that the mediating variable represents a mechanism or process through which the relationship between the independent and dependent variables is influenced.

Therefore, it can be inferred that the independent variable peer interaction still has a significant effect on the dependent variable student engagement when the mediator variable discussion frequency is taken into account, but this effect is partially realized through the mediator variable discussion frequency.

Discussion

The results of this study reveal the intricate relationship between social media use, peer interaction, discussion frequency, and student engagement. The results of the study lead to several important conclusions that help us understand how these factors interact to influence educational outcomes Implications of the findings for theory, practice, and future research are presented.

Implications for Theory:

The findings of this study have significant implications for educational theories, particularly those related to student engagement and digital learning environments. Integrating social media into educational practice challenges traditional conceptualizations of student engagement and provides new insights into how digital technologies shape the learning experience.

First, the findings highlight the multifaceted nature of student engagement in the context of social media use and help to expand theories of engagement. Traditional theories of engagement typically focus on factors in the classroom environment, such as teacher-student interactions and course design. However, this study shows that external factors (e.g., social media platforms) play an important role in influencing student engagement. Therefore, engagement theories need to consider the impact of digital technology on student engagement.

In addition, this study's emphasis on peer interaction and discussion frequency extends social learning theory. Social learning theory suggests that learning occurs through interactions with others, and social media platforms provide opportunities for collaborative learning experiences. By demonstrating the positive impact of social media-facilitated peer interactions and active discussions, this study enriches our understanding of how social learning theory is represented in digital learning environments.

In addition, this study identifies discussion frequency as a mediating factor, emphasizing the importance of cognitive load theory in understanding student engagement in online discussions. Cognitive load theory suggests that learning is influenced by the amount of mental effort required to process information. In the context of social media use, high quality discussions can reduce cognitive

load by facilitating deeper understanding and knowledge construction. Therefore, cognitive load theory needs to consider the role of online discussions in promoting student engagement and learning.

In conclusion, the findings of this study contribute to the development of educational theory by integrating insights from digital learning environments and social media use. By incorporating these insights into existing theoretical frameworks, educators and researchers can develop more comprehensive models of student engagement and design effective instructional strategies for the digital age.

Implications for Practice:

The findings of this study have important implications for educational practice, providing educators, administrators, and decision-making with actionable insights to help them improve student engagement in digital learning environments. These implications relate to instructional design, teaching strategies, and technology integration in education.

First, educators can utilize social media platforms to create more engaging and interactive learning experiences for students. By incorporating social media tools into instructional design, educators can promote peer interaction, collaborative learning, and active participation. For example, educators can utilize discussion boards on platforms such as Twitter or Facebook to encourage student dialog, debate, and knowledge sharing outside of the traditional classroom.

Additionally, this study emphasizes the importance of fostering a supportive online community to increase student engagement. Educators can create online learning communities where students feel comfortable sharing their thoughts, ideas, and questions with their peers. By promoting a sense of belonging and camaraderie, educators can foster a positive learning environment that motivates students to actively participate in discussions and collaborative activities.

In addition, the findings emphasize the value of promoting active discussion and increasing discussion frequency in online learning environments. Educators can implement strategies to encourage student engagement in online discussions on a regular basis, such as setting clear expectations, providing prompts for discussion topics, and providing timely feedback on student contributions. By fostering a culture of active participation, educators can improve student learning outcomes and promote critical thinking and problem-solving skills.

Additionally, administrators and policymakers can support educators' use of social media for educational purposes by providing professional development opportunities and access to resources and tools. Investing in teacher training programs that effectively integrate social media into teaching and learning can empower educators to realize the full potential of digital technologies to improve student engagement and learning.

In summary, the findings of this study highlight the transformative potential of social media in education and emphasize the need for educators to adapt their practices to meet the changing needs of

digital learners. By utilizing social media platforms as valuable educational tools and implementing evidence-based strategies to promote student engagement, educators can create dynamic and interactive learning environments that promote deep learning and allow students to succeed in the digital age.

Implications for Future Research:

The findings of this study provide valuable insights into the complex interplay between social media use, peer interaction, discussion frequency, and student engagement in educational settings. As such, these findings provide several avenues for future research aimed at deepening our understanding of these dynamic relationships and informing the development of effective educational interventions and policies.

First, future research could explore the longitudinal effects of social media use on student engagement over time. Longitudinal studies will allow researchers to track changes in student engagement patterns over time in response to the changing dynamics of social media use and peer interaction. Understanding how these relationships unfold over time could provide greater insight into the long-term impact of social media on student learning outcomes.

Additionally, researchers could investigate the impact of different social media platforms and features on student engagement. Comparative studies could examine the different impacts of different platforms such as Twitter, Facebook, and Instagram on student engagement and interaction. Additionally, research could delve into specific features of social media platforms, such as group discussions, live streaming, and multimedia content sharing, to determine which elements are most effective in promoting student engagement.

Additionally, future research could explore the moderating effects of individual differences (e.g., age, gender, cultural background, and prior digital literacy) on the relationship between social media use and student engagement. Understanding how these factors influence student engagement with social media platforms and their educational experiences could inform the development of personalized learning approaches tailored to individual needs and preferences.

In addition, researchers can investigate the effectiveness of interventions designed to promote student engagement through social media use and peer interaction. Experimental studies can examine the effectiveness of specific instructional strategies (e.g., online group projects, collaborative problem-solving tasks, and peer-led discussions) in increasing student engagement and learning outcomes. Additionally, quasi-experimental studies could assess the impact of policy measures designed to promote the integration of social media into educational settings.

Finally, future research could explore the ethical and privacy implications of social media use in education. As social media platforms continue to collect large amounts of user data, concerns about data privacy, security, and digital well-being have become increasingly prominent. Researchers can investigate how educational institutions can address these ethical challenges while taking advantage of

social media to improve student engagement and learning outcomes.

In summary, the results of this study provide valuable insights and raise important questions for future research on the integration of social media and education. By addressing these research gaps, scholars can advance our understanding of the complex relationship between social media use, peer interaction, and student engagement, ultimately informing evidence-based practice and policy in digital learning environments.

Conclusions

In summary, this study provides valuable insights into the complex interplay between social media use, peer interaction, discussion frequency, and student engagement in educational settings. The findings emphasize the critical role of social media platforms in influencing student engagement in learning activities. Increased social media use was positively correlated with increased student engagement, highlighting the potential of these digital tools to promote a positive learning environment.

In addition, peer interaction is a key driver of student engagement, emphasizing the importance of the collaborative learning environment provided by social media platforms. Encouraging peer interaction creates a supportive and inclusive learning atmosphere that empowers students to actively engage in discussions and collaborate on projects.

Furthermore, discussion frequency was identified as a key mediator of the relationship between social media use and student engagement. By facilitating regular and meaningful discussions, social media platforms indirectly influenced student engagement by providing opportunities for reflection and knowledge construction.

While peer interaction had a direct and significant impact on student engagement, part of this impact was mediated by discussion frequency. This highlights the interconnectedness of these variables and emphasizes the importance of active discussion platforms in facilitating peer interaction and increasing student engagement.

Overall, these findings have important implications for educational practices and policies aimed at increasing student engagement in the digital age. Educators can utilize social media platforms to create dynamic and interactive learning experiences that promote peer interaction, facilitate meaningful discussions, and ultimately increase student engagement. As technology continues to evolve, further research is needed to explore new trends and best practices for using social media for educational purposes. Longitudinal studies can examine the long-term impact of social media use on student learning outcomes, providing insight into the efficacy of social media as a tool to increase student engagement and success. By adopting innovative pedagogical approaches to harness the power of social media, educators can help prepare students for success in an increasingly connected and digital world.

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