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From Likes to Learning: Innovative Strategies for Using Social Media to Boost Gen Z Academic Performance

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ABSTRACT

The existing literature acknowledges the potential of social media to enhance online learning, but a significant gap exists in comprehensively understanding how teachers' specific social media skills directly influence the quality of online learning experiences and student outcomes. This research examines how teachers' social media skills relate to their perceptions of online learning quality, focusing on both the predictive influence of these skills and their correlation with teachers' evaluations of online learning. This quantitative study, utilizing surveys and statistical analyses such as descriptive statistics, Pearson correlation, and simple linear regression, investigates the relationship between teachers' social media skills (independent variable) and the quality of online learning (dependent variable), confirming the validity and reliability of the instruments used through content and construct validity assessments and Cronbach's alpha values. The result finds that teachers' social media skills have a positive impact on the quality of online learning, as well as student engagement and interaction. Educational institutions can support teachers in enhancing their online teaching by providing training on the effective use of social media tools and platforms. This study implies that investing in teachers' social media skills training can significantly enhance the quality of online learning experiences and student engagement in the digital age.

Keywords
Online Learning
Quantitative Study
Social Media Skills
Student Engagement
Teacher Training

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Introduction

Current literature acknowledges a transformative shift in education towards online learning, particularly accelerated by the COVID-19 pandemic [1]. This shift necessitates rapid adaptation from educators, students, and institutions, emphasizing the critical role of online learning quality in achieving optimal learning outcomes. Existing research indicates a correlation between teaching quality and teacher proficiency [2]. Furthermore, studies have noted the potential of social media to enhance student engagement and facilitate collaboration [3],[4]. Initial evidence suggests that when teachers are skilled in using social media, their online teaching becomes more interactive, collaborative, and student-centered, positively impacting student motivation and understanding [5],[6].

The rapid shift towards online learning, accelerated by the COVID-19 pandemic, has underscored the critical importance of online learning quality in achieving optimal educational outcomes [2]. Current literature recognizes the transformative potential of social media in education, highlighting its capacity to enhance student engagement and facilitate collaborative learning experiences [3],[4]. Studies suggest a positive correlation between teachers' proficiency in social media and the interactivity, collaboration, and student-centeredness of their online teaching, ultimately impacting student motivation and understanding [5],[6].

Despite the growing body of evidence supporting the use of social media in education [7],[8], a significant gap exists in the comprehensive understanding of how teachers' social media skills specifically influence the quality of online learning. Prior research [9],[10] has not exhaustively explored the nuanced relationship between teacher competency in social media utilization and various dimensions of online learning quality. Furthermore, the extent to which social media integration impacts student well-being and the long-term effects of professional development programs focused on social media integration remain under-investigated.

The primary gap identified is the lack of in-depth empirical research on the direct impact of teachers' social media skills on the perceived and actual quality of online learning experiences. This includes the need to understand how these skills translate into tangible improvements in student engagement, learning outcomes, and overall satisfaction with the online learning environment [11]. The existing literature provides a foundation [12], but it

lacks the specificity required to develop targeted interventions and policies that can maximize the educational potential of social media.

The exploration of the correlation between educators' proficiency in social media and the resultant quality of online education holds significant implications for pedagogical advancement. A nuanced comprehension of this relationship facilitates the creation of customized instructional strategies optimized for the digital learning space [13]. By pinpointing the precise social media competencies that exert the most influence on the efficacy of online learning, institutions can formulate targeted professional development initiatives [14], thereby equipping educators with essential skills and support. Empirical research in this domain serves as a bedrock for crafting judicious policies that advocate for the ethical and productive assimilation of social media into online curricula [11],[15], ensuring that technology serves to augment, rather than undermine, the educational process. The ultimate aim of bridging this knowledge gap is to foster heightened student involvement, motivation, and academic achievement within virtual environments, thus bolstering their overall welfare and scholastic success.

Research endeavors to explore this relationship should employ rigorous methodologies to provide robust evidence that informs practice and policy, ensuring that social media is leveraged to its full potential in enhancing the quality of online education.

A. Research Question

1. To what extent do teachers' social media skills predict their perception of online learning quality?
2. Which aspect of teachers' social media skills has the greatest influence on the perceived quality of online learning?
3. Is there a significant correlation between teachers' social media skills and their perception of online learning quality?

B. Research Purposes

This study investigates the relationship between teachers' social media skills and their perceptions of online learning quality. Specifically, it explores the predictive power of teachers' social media skills on their evaluation of online learning environments and examines the statistical correlation between their proficiency in using social media and their overall assessment of the quality of online learning experiences.

Theoretical Framework

This research will be framed by a theoretical model that draws upon Connectivism, Social Cognitive Theory, and the Technology Acceptance Model (TAM) to explain how teachers' social media skills influence the quality of online learning experiences and student outcomes. This framework posits that the effective integration of social media into online learning

environments, guided by skilled teachers, can lead to enhanced student engagement, improved learning outcomes, and a more positive perception of online learning.

A. Connectivism

Connectivism posits that learning is the establishment of connections within networks, where knowledge is distributed and accessed through navigation and creation, thereby offering a relevant framework for understanding social media's role as a learning network [16]. Social media-proficient educators can leverage these platforms to foster networked learning environments that connect students to diverse resources, experts, and peers, acknowledging a shift from internalized knowledge to engagement with distributed knowledge systems [17]. Research can then apply this theory to investigate educators' strategies for building connected learning environments via social media, facilitating collaboration, knowledge sharing, and access to diverse perspectives, ultimately extending learning beyond conventional classroom settings to promote continuous, lifelong learning.

B. Social Cognitive Theory

Social Cognitive Theory posits that learning is achieved through observation, imitation, and modeling, wherein self-efficacy, or the belief in one's capabilities, significantly influences both learning and behavior [18]; this theory suggests that teachers serve as role models for social media use in learning, as students are more likely to adopt practices demonstrated by teachers [19], and students' self-efficacy in online learning increases when they perceive that social media enhances their learning experiences and outcomes [20]; consequently, this research will explore how teachers model effective social media use to foster positive student attitudes and examine the relationship between social media integration, student self-efficacy, and academic performance to understand the motivational aspects of social media in education.

C. Technology Acceptance Model (TAM)

The Technology Acceptance Model (TAM) posits that the adoption of technology is primarily influenced by perceived usefulness, defined as the extent to which an individual believes a system will improve their job performance, and perceived ease of use, referring to the belief that using the system will be effortless [21] consequently, TAM offers a valuable framework for examining the integration of social media in online learning environments by both teachers and students [22], as positive perceptions of usefulness and ease of use among teachers correlate with effective utilization, while students' acceptance hinges on similar perceptions regarding learning outcomes [23], therefore, empirical research should assess these perceptions and their subsequent impact on engagement and learning outcomes, while also exploring strategies to enhance perceptions of value and usability to promote effective integration.

1. Integrated Model and Hypotheses

An integrated framework indicates that educators' proficiency with social media platforms positively affects their perception of these tools' utility and usability for online education [24]–[25], which in turn fosters the actual implementation of social media in teaching practices. This effective integration of social media cultivates interconnected learning communities, encouraging students to emulate productive social media behaviors [26]. Subsequently, students' modeling of these behaviors and active engagement within connected learning environments contribute to heightened engagement, self-efficacy, and improved learning outcomes [27]. Crucially, institutional support for educators' development of social media skills significantly bolsters their perceived usefulness, ease of use, and practical application of these technologies [28].

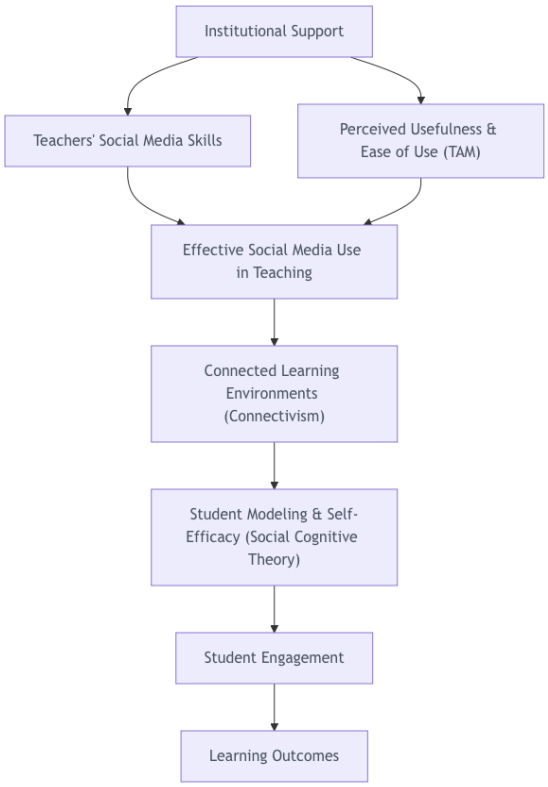


Fig. 1. Conceptual Diagram

This framework addresses the research questions:

The integration (Fig. 1) of social media skills by educators significantly impacts the quality of online learning experiences and student outcomes, a relationship understood through Connectivism, Social Cognitive Theory, and the Technology Acceptance Model (TAM). Furthermore, educational institutions can foster this integration by providing targeted support to teachers, which enhances their perceptions of usefulness and ease of use regarding social media tools, ultimately promoting the creation of more connected and effective online learning environments.

Material and Methods

A. Research Design

This study employed a quantitative research design to investigate the relationship between teachers' social media skills and the quality of online learning. A correlational approach [29] was used to determine the extent to which a teacher's proficiency in utilizing social media platforms is associated with the perceived quality of online learning environments.

B. Participants

The participants in this study comprised a sample of 25 teachers (N = 25). These teachers were selected based on their experience with online learning and their use of social media in educational contexts.

C. Variables

This study examined the relationship between two primary variables: teachers' social media skills and the quality of online learning. The independent variable was the teacher's social media skills, measured using a survey instrument designed to generate a continuous score reflecting their level of expertise. The dependent variable was the perceived quality of online learning, also measured using a survey instrument, resulting in a continuous score representing the perceived effectiveness and overall quality of the online learning experience.

D. Instrument

Two survey instruments were used to collect data for this study:

1. Teacher Social Media Skills Survey

   This instrument consisted of 17 items designed to measure teachers' proficiency and experience in using various social media platforms for educational purposes. The instrument was developed based on indicators proposed by López-Carril et al. [30], including: Technical Knowledge, Operational Skills, Creativity & Pedagogy, and Efficiency & Problem-Solving.

2. Online Learning Quality Survey

   This instrument comprised 15 items designed to assess teachers' perceptions of the quality and effectiveness of online learning environments. The Online Learning Quality indicator includes the perception of Student Engagement and the perception of Student Understanding [31].

E. Validity and Reliability of Instruments

The validity and reliability of instruments (questionnaires) must be assessed to ensure they accurately measure the intended constructs and provide consistent results. Validity was evaluated through content validity (relevance of questions to the construct) and construct validity (alignment with the underlying theoretical framework). Instrument validity was analyzed using Pearson correlation calculations [32], with the following results:

Table 1. Instrument Validity

Variable	Number of Items	Valid Items	Invalid Items
Teacher Skills in Social Media Usage	7	17	-
Online Learning Quality	15	15	-

Table 1 indicates that the questionnaire for the variable Teacher Skills in Social Media Usage comprised 17 items. The instrument validation process demonstrated that all items were valid. Similarly, the Online Learning Quality variable, with 15 items, also exhibited validity across all items. Consequently, no items from either variable were removed.

Instrument reliability was determined using Cronbach's alpha [33] to measure internal consistency. The reliability test results for each variable are presented below:

Table 2. Instrument Reliability

Variable	Cronbach's Alpha Value
Teacher Skills in Social Media Usage	0.996
Online Learning Quality	0.875

Table 2 reveals a Cronbach's alpha value of 0.996 (> 0.60) for the Teacher Skills in Social Media Usage variable. This suggests that the questionnaire designed to measure teacher skills in social media usage possesses high reliability. Likewise, the Online Learning Quality questionnaire yielded a Cronbach's alpha of 0.875 (> 0.60), indicating high reliability for the items measuring online learning quality.

F. Data Analysis

The study began with descriptive statistics to outline the characteristics of the sample. Means, medians, standard deviations, minimums, and maximums [34] were calculated for both teachers' social media skills and the perceived quality of online learning. These descriptive measures provided a crucial foundation for understanding the central tendencies and variability within each variable before proceeding with more advanced analyses [35].

Next, Pearson correlation analysis [36] was employed to explore the linear relationship between teachers' social media skills and the quality of online learning. The Pearson correlation coefficient (r) quantified the strength and direction of this relationship, indicating whether higher social media skills were associated with higher or lower perceptions of online learning quality. This analysis helped to determine the degree to which the two variables moved together.

Finally, simple linear regression [37] was used to assess the predictive power of teachers' social media skills on the perceived quality of online learning. This analysis aimed to determine if variations in social media skills could significantly explain or predict variations in online learning quality. The regression model produced a coefficient indicating the predicted change in online learning quality for each unit increase in social media skills. While R-squared wasn't

specified in the source text, this value would reflect the proportion of variance in online learning quality explained by social media skills.

Descriptive statistics are employed to generate a comprehensive profile of the survey respondents. Furthermore, the strength and direction of the relationships among variables are determined using the values of r and r^2, in conjunction with model fit indices. Regression analysis is conducted to ascertain the impact of independent variables on the dependent variable.

Results

This study investigated the influence of teachers' social media skills on the quality of online learning. Data were collected from a sample of 25 teachers (N=25) using survey instruments to measure both social media skills and perceived online learning quality.

A. Descriptive Statistics

Table 3 presents the descriptive statistics for teachers' social media skills and perceived online learning quality.

Table 3. Descriptive Statistics

Statistic	Teacher Social Media Skills	Online Learning Quality
N	25	25
Missing	0	0
Mean	59.7	41.8
Median	60	41
Standard Deviation	19.8	10.5
Minimum	19	19
Maximum	85	65

The data compares teachers' ability to use social media with the quality of online learning, based on a sample of 25 teachers each. The average (mean) social media ability score is 59.7, with a median of 60, indicating a relatively symmetrical distribution. The standard deviation of 19.8 suggests considerable variation in teachers' social media skills, with scores ranging from a minimum of 19 to a maximum of 85. The average quality score for online learning is 41.8, with a median of 41, also indicating a symmetrical distribution. The standard deviation for online learning quality is 10.5, with scores ranging from a minimum of 19 to a maximum of 65. Overall, these data provide an overview of teachers' social media abilities and the quality of their online teaching, highlighting the variation among teachers in both areas.

B. To what extent do teachers' social media skills predict their perception of online learning quality

A simple linear regression was conducted to examine the predictive relationship between teachers' social media skills (independent variable) and perceived online learning quality (dependent variable). The model fit indices are presented in Table 4.

Table 4. Model Fit

Model	R	R^2
1	0.581	0.337

The R-value of 0.581 (Table 5) indicates a moderately strong and positive relationship between the predictor variable and the dependent variable in this regression model. The coefficient of determination (R^2) of 0.337 indicates that 33.7% of the variation in the online learning quality variable can be explained by the teachers' social media skills variable included in the model, while the remaining portion is influenced by other factors outside the model.

Table 5. Regression Coefficients

Predictor	Estimate	SE	t	p
Intercept	23.396	5.6475	4.14	<.001
Teacher Social Media Skills	0.308	0.0900	3.42	0.002

The results indicate a significant positive relationship between teachers' social media skills and perceived online learning quality (b = 0.308, SE = 0.0900, p = 0.002). For every one-unit increase in teachers' social media skills, the predicted online learning quality increases by 0.308 units. The intercept was also statistically significant (b = 23.396, SE = 5.6475, p < .001). Teachers' social media skills have a moderate predictive effect on perception of online learning quality.

C. The most influential aspect of a teacher's social media skills on the perceived quality of online learning

Teacher social media skills consist of four important aspects: Technical Knowledge, Operational Skills, Creativity & Pedagogy, and Efficiency & Problem-Solving. These four aspects have varying influences on the perception of online learning quality. The results of the analysis of each aspect are as follows:

Table 6. The Influence of Each Aspect on Learning Quality

Predictor	Estimate	SE	t	p
Operational Skills	1.21	0.367	3.30	0.003
Technical Knowledge	1.25	0.379	3.31	0.003
Creativity & Pedagogy	1.21	0.350	3.45	0.002
Efficiency & Problem-Solving	1.22	0.364	3.35	0.003

Based on Table 6, all aspects of teachers' social media skills show a significant influence on the perceived quality of online learning. The estimated values for all four aspects—Operational Skills (1.21), Technical Knowledge (1.25), Creativity and Pedagogy (1.21), and Efficiency and Problem-Solving (1.22)—are all positive, indicating that improvements in each of these skills contribute to an increased perception of online learning quality. The t-values, ranging from 3.30 to 3.45, with p-values between 0.002 and 0.003, indicate that all of these influences are statistically significant at a 95% confidence level. Among these four aspects, Technical Knowledge has the highest estimated value (1.25), which means that this aspect is the most

dominant factor in influencing the perceived quality of online learning. In other words, the higher a teacher's mastery of the technical aspects of social media use, such as utilizing platform features, managing content, and maintaining digital interaction, the greater the positive perception of the quality of the online learning they conduct.

D. Correlation between teachers' social media skills and perception of online learning quality

Pearson correlation analysis was performed to further investigate the relationship between teachers' social media skills and online learning quality. The results are presented in Table 7.

Table 7. Correlation Matrix

Variable	Analysis	Score
Online Learning Quality x Teacher Social Media Skills	**Pearson's r**	0.581
	df	23
	p-value	0.002

The Pearson correlation coefficient ($r = 0.581$, $p = 0.002$) indicates a statistically significant, moderate positive correlation between teachers' social media skills and perceived online learning quality. This suggests that teachers with higher social media skills tend to perceive online learning quality more favorably. There is a statistically significant, moderate positive correlation between teachers' social media skills and their perception of online learning quality.

Discussion

The evidence gleaned from this study lends credence to the central hypothesis, positing a positive association between educators' social media acumen and the resultant quality of online learning experiences. The regression analysis, a statistical method employed to model the relationship between variables, revealed that teachers' proficiency in social media significantly predicts the perceived quality of online learning. Specifically, the variance in online learning quality explained by teachers' social media skills amounts to approximately 33.7%. This indicates a substantial influence, suggesting that social media skills are a key determinant in shaping the quality of online educational environments.

Further bolstering this conclusion is the correlation analysis. This statistical technique, designed to measure the strength and direction of a relationship between two variables, demonstrated a moderate positive association between teachers' social media skills and the perceived quality of online learning. A positive correlation implies that as one variable increases, the other tends to increase as well, reinforcing the notion that enhanced social media skills among teachers are linked to improvements in online learning quality.

These findings are in alignment with a growing body of scholarly literature that underscores the importance of digital competence in the realm of effective online teaching [5].

Educators who are well-versed in the nuances of social media are better positioned to cultivate online learning environments that are interactive, collaborative, and student-centered [38]. The deployment of interactive features inherent in social media platforms—such as discussion forums, online polls, and collaborative documents—can significantly enhance student engagement, foster a sense of community, and deepen comprehension of the subject matter [39]–[40]. Moreover, the escalating adoption of social media platforms as integral learning tools in the contemporary digital age highlights the exigent need for teachers to adapt their pedagogical practices to integrate these technologies effectively [3], [25]. This integration is not merely about using technology for its own sake but rather about strategically leveraging its capabilities to enhance the learning experience.

The observed positive correlation between teachers' social media skills and the quality of online learning indicates that as teachers become more adept at utilizing social media, there is a corresponding improvement in the perceived quality of the online learning experience. This observation resonates with the broader trend toward leveraging technology to create more interactive and personalized learning environments within the context of 21st-century education [41],[42]. The judicious integration of social media into online learning paradigms can enhance the accessibility of learning materials, thereby democratizing education and fostering more active student participation, as well as cultivating supportive virtual learning communities [7], [43].

For illustrative purposes, consider the utility of platforms such as WhatsApp. This messaging application can facilitate seamless collaboration among students, enabling them to work together on projects, share resources, and engage in peer-to-peer learning [44]. Furthermore, it provides an accessible channel for the dissemination of learning materials, ensuring that students have convenient access to the resources they need [45]. Similarly, platforms like Instagram can offer students opportunities to augment their creativity and express their ideas in visually compelling ways [46], and deepen their engagement in the learning process through the creation and sharing of multimedia content [47].

However, it is of paramount importance to emphasize that the utilization of social media in educational contexts must be approached with careful deliberation and intentional design. The focus should remain steadfastly on achieving clearly defined learning objectives [26]. Platforms should be selected judiciously, ensuring that they align with the specific needs and preferences of the students [48]. Moreover, it is essential to provide teachers with comprehensive training on the effective and pedagogically sound use of social media in learning environments to maximize its potential benefits and mitigate potential drawbacks [49].

The research results specifically indicate that all aspects of teachers' social media skills encompassing technical knowledge, operational skills, creativity and pedagogy, and efficiency and problem-solving have a positive and significant impact on the perception of online learning quality. Technical Knowledge emerges as the most dominant aspect. These findings suggest that the greater the teachers' ability to understand the technical features, functions, and mechanisms of social media, the more positive their perception of the effectiveness of online learning. This result aligns with the concept of Technological Pedagogical Content Knowledge (TPACK), which emphasizes that meaningful integration of technology in learning requires the interaction of technical, pedagogical, and content competencies [50]. Furthermore, according to Y. Liu et al., [51], online learning demands technical skills as a foundation for utilizing digital media in education. Research by Lambton-Howard et al., [25] also reinforces that understanding social media features can be leveraged for pedagogical purposes and has been proven to increase online learning engagement. When teachers understand the technical aspects of using social media, they can develop innovative learning processes by utilizing its various features [52]. Thus, these findings reinforce the view that technical mastery of social media not only increases teachers' efficiency and creativity but also contributes to an enhanced perception of the overall quality of online learning.

In summation, the findings of this study lend further support to the existing body of research, reinforcing the assertion that teachers' social media skills are positively and significantly related to the perceived quality of online learning experiences. This underscores the importance of investing in teacher training and professional development to enhance their digital competence and enable them to effectively leverage social media as a tool for enhancing student learning outcomes.

Conclusion

This study confirms that teachers' social media skills have a positive and significant impact on the quality of online learning. The more skilled teachers are in utilizing social media, the higher the perceived quality of online learning. This finding aligns with previous research highlighting the importance of teachers' digital competence in the context of distance learning. It emphasizes the importance of teacher adaptation to social media as a learning tool. Therefore, there is a need for professional development programs that focus on improving teachers' skills in using social media for learning, supported by educational policies that encourage the integration of social media in online learning through the provision of resources and incentives.

Limitations

This study, while insightful, is limited by its small sample size (N=25), which impacts the generalizability of the findings. The reliance on self-reported data introduces potential biases, and the correlational design prevents drawing causal inferences between teachers' social media skills and online learning quality. Furthermore, the study's narrow focus on social media skills overlooks other influential variables like student characteristics and course design. The lack of demographic information, such as subject matter, grade level, and experience, further restricts the generalizability of the findings to broader teacher populations. Future research should address these limitations to provide a more comprehensive understanding of social media's role in online learning.

Conflict of Interest

The authors declare no conflict of interest.

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