



JOURNAL OF TERTIARY EDUCATION AND LEARNING (JTEL)

ISSN: 2994-4015 (Online)

VOLUME 2 ISSUE 3 (2024)



PUBLISHED BY
E-PALLI PUBLISHERS, DELAWARE, USA



Social Media Use and Critical Thinking Skills among Senior High School Learners: A Quantitative Correlational Study

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Article Information

Received: October 31, 2024

Accepted: December 03, 2024

Published: January 13, 2025

Keywords

Academic Engagement, Critical Thinking, Quantitative-Correlational Study, Senior High School Learners, Social Media Use

ABSTRACT

This study explored the relationship between social media use and critical thinking skills among Senior High School (SHS) learners in the Davao region. A quantitative correlational research design utilized survey data from a sample of SHS students. First, this study assessed the level of social media use among students, with the majority engaged with social media for more than two hours daily, mainly for social interaction and entertainment, with limited use for educational purposes. The study then measured students' critical thinking abilities, which revealed a moderate level of critical thinking across the sample, with some students performing better on higher-order thinking tasks. A significant positive correlation ($r = 0.45$, $p < 0.01$) was found between social media use for academic purposes and critical thinking. It suggests that educationally focused social media activities may enhance critical thinking skills. Further analysis identified that the frequency of participation in academic discussions on social media ($\beta = 0.35$, $p < 0.01$) was a significant predictor of critical thinking abilities. However, passive social media use showed no significant impact. These findings imply that while social media can foster critical thinking, its impact largely depends on how it is used. The study emphasizes the importance of promoting purposeful academic engagement with social media to improve cognitive skills among SHS learners.

INTRODUCTION

Integrating social media in education has become a focal point of discussions about enhancing student engagement and learning outcomes. Over recent years, platforms such as Facebook, Twitter, and Instagram have been leveraged to support various pedagogical methods, such as collaborative learning, peer assessment, and immediate feedback (Ashraf *et al.*, 2021; Al-Rahmi *et al.*, 2022). While social media's role in academic settings is expanding, its impact on more complex cognitive processes like critical thinking, particularly among senior high school students, remains underexplored. This gap in understanding is crucial as educational systems continue to explore the potential of digital tools in fostering more excellent cognitive skills.

Critical thinking, the ability to evaluate and analyze information systematically, is widely recognized as a vital skill for academic and professional success (Fisher & Scriven, 2021). Critical thinking is critical in senior high schools as it prepares learners for higher education and careers where problem-solving, reasoning, and independent judgment are key (Sow *et al.*, 2020). With their dynamic and interactive features, social media platforms present an opportunity to enhance these cognitive abilities. However, the very nature of social media, characterized by short, rapid content exchanges, may simultaneously hinder critical thinking by promoting passive consumption over active engagement (Dabbagh & Kitsantas, 2012). Thus, understanding the balance between these dual effects becomes critical.

In the context of Filipino education, where social media use among students is particularly pervasive, it is essential

to investigate how these platforms influence critical thinking abilities. Recent studies have highlighted that the impact of social media on learning varies widely depending on how it is utilized (Othman *et al.*, 2012). While collaborative learning and peer interactions on social media can foster positive learning environments, they can also introduce distractions that impede deeper cognitive processes (Pitafi *et al.*, 2020). As social media tools evolve and become increasingly integral to the educational landscape, addressing these challenges is imperative to ensure that their use benefits students' critical thinking development.

Despite the growing body of research on social media's educational applications, there is still a significant gap in the literature regarding its specific effects on critical thinking, particularly in the context of senior high school learners in the Philippines. While some studies suggest that social media can stimulate engagement and collaborative learning (Chang & Zhu, 2012), few have examined its direct relationship with critical thinking skills (Khan *et al.*, 2019). Furthermore, existing research tends to focus on higher education, leaving a gap in understanding how these dynamics unfold at the senior high school level.

This study bridged this gap by exploring the effects of social media use on developing critical thinking among senior high school students in the Philippines. Specifically, it determined whether the use of social media for academic purposes enhances or detracts from the critical thinking skills of these learners. By investigating how social media platforms are integrated into classroom learning, this research offered valuable insights into practical strategies

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for using digital tools to promote higher-order thinking skills in educational settings.

Problem Statement

Social media has become a central part of the lives of Senior High School (SHS) learners, offering opportunities for communication and access to information. However, concerns persist about its potential impact on critical thinking skills, an essential competency for academic and real-world success. While critical thinking enables learners to analyze and evaluate information effectively, excessive or unregulated social media use may hinder these abilities by promoting distractions and superficial engagement with content. Despite its relevance, the relationship between social media use and critical thinking among SHS learners remains underexplored.

This study investigated the level of social media use and critical thinking among SHS learners, examined the relationship between these variables, and identified which aspects of social media use predict critical thinking. In addressing these gaps, the study provided valuable insights for educators and policymakers in balancing the benefits of social media with fostering critical thinking and supporting informed strategies for integrating digital literacy in education.

Research Questions

1. What is the extent of social media use among Senior High School (SHS) learners?
2. What is the level of critical thinking skills exhibited by SHS learners?
3. Is there a significant relationship between the extent of social media use and the critical thinking skills of SHS learners?
4. Which indicators of social media use significantly predict the critical thinking skills of SHS learners?

LITERATURE REVIEW

Social media has become integral to students' lives, influencing their academic and social behaviors. Studies have shown that students spend significant time daily on platforms such as Facebook, Instagram, and TikTok, often for entertainment and peer interaction (Smith *et al.*, 2022; Zhao & Li, 2023). While social media fosters global connectivity, excessive usage has been associated with reduced academic focus (Jones *et al.*, 2021; Greenfield, 2020). However, purposeful social media engagement, like participating in academic groups or forums, can positively impact learning (Lee *et al.*, 2021; Martinez & Torres, 2023). The dual role of social media as a distraction and a learning tool highlights its complex impact on students' academic performance (Thompson *et al.*, 2022; Johnson *et al.*, 2023). As such, research increasingly focuses on strategies to guide students toward productive use of social media for academic growth.

Critical thinking, a cornerstone of education, involves analyzing, synthesizing, and evaluating information to make reasoned judgments. Various studies emphasize

the role of critical thinking in equipping students with skills for academic and real-world problem-solving (Brown & Smith, 2023; Williams *et al.*, 2022). Despite its importance, educators face challenges in fostering critical thinking due to traditional rote learning practices (Chen & Yu, 2021; Evans *et al.*, 2023). Innovative approaches, including project-based and inquiry-based learning, have demonstrated effectiveness in enhancing critical thinking (Anderson & Taylor, 2023; Rivers *et al.*, 2022). The integration of digital tools, particularly in blended learning environments, further supports the development of critical thinking (Kumar *et al.*, 2023; Fisher & Hart, 2022). Yet, a gap remains in understanding how external factors, like social media, influence these cognitive abilities.

Emerging research indicates a nuanced relationship between social media use and critical thinking skills. Social media platforms can serve as avenues for knowledge-sharing and collaborative learning, which are essential for critical thinking (Garcia & Cruz, 2022; Silva *et al.*, 2023). However, excessive passive consumption of content has been linked to cognitive overload and decreased analytical reasoning (Nguyen *et al.*, 2022; Carter & Green, 2021). On the positive side, participation in discussions on academic forums and exposure to diverse perspectives online can foster analytical skills (Lopez *et al.*, 2023; Zhang & Huang, 2022). The platform design also plays a role, with interactive features encouraging critical evaluation of content (Martin *et al.*, 2022; Perez & Gomez, 2023). Nonetheless, the influence of non-academic social media activities on critical thinking remains underexplored, calling for further investigation.

Certain indicators of social media use have been identified as predictors of critical thinking skills. Engagement in academic discussions and accessing information through educational groups significantly correlate with higher-order thinking abilities (Williams & Grant, 2022; Thomas *et al.*, 2023). Conversely, passive browsing or engaging with superficial content has minimal impact on cognitive skills (Anderson *et al.*, 2022; Rivera & Lopez, 2023). The role of digital literacy is also crucial, as students with higher digital skills are more likely to use social media for meaningful academic purposes (Taylor & Brown, 2023; Kim & Park, 2022). Time management and the balance between academic and recreational use further influence critical thinking outcomes (Gonzalez & Martinez, 2023; Chen *et al.*, 2022). Despite these findings, understanding the nuanced interactions among these predictors requires deeper empirical exploration.

While research highlights the potential of social media as a tool for enhancing critical thinking, several gaps persist. Studies often fail to differentiate between active and passive social media use, overlooking how varied behaviors impact cognitive skills (Hernandez *et al.*, 2022; Johnson & Cruz, 2023). Additionally, the role of specific platforms and their features in fostering critical engagement is under-researched (Zhao *et al.*, 2023; Carter & Lee, 2022). There is also limited evidence on the long-

term effects of sustained academic use of social media on critical thinking development (Garcia & Martin, 2022; Thomas *et al.*, 2023). Future research should adopt longitudinal designs to explore causal relationships and focus on interventions that maximize the educational benefits of social media while mitigating its drawbacks (Smith *et al.*, 2023; Lopez *et al.*, 2023).

MATERIALS AND METHODS

This study employed a quantitative-correlational approach to examine the relationship between social media use and critical thinking among Senior High School (SHS) learners in the Philippines and comprehensively analyze how social media use influences critical thinking skills. Through this research design, the study offered an understanding of the variables at play, drawing from established methods in educational research (Creswell & Plano Clark, 2017).

Sampling Strategy and Participants

A stratified random sampling technique was used to select participants from three senior high schools in the Davao region. The strata were based on school type (public or private) and grade level to ensure a representative sample of SHS learners. The final sample included approximately 105 students, with 35 students from each school type. This ensured diversity in terms of socioeconomic background, which is crucial for understanding how different contexts may influence social media use and critical thinking (Robson & McCartan, 2016).

Data Collection

Data were gathered through conducting field surveys. Survey questionnaires were administered to measure the participants' social media use and critical thinking skills. The social media use questionnaire covered items related to frequency, type of platforms engaged with, and specific purposes for use (e.g., academic vs. recreational). It also included a Likert scale to assess the intensity of engagement with social media, adapted from the work of Junco (2012). The critical thinking assessment was anchored on the California Critical Thinking Skills Test (CCTST), a validated instrument for measuring critical thinking abilities in educational settings (Facione, 2015).

Data Analysis

For the quantitative data, statistical analysis was performed using SPSS. Descriptive statistics was used to assess the participants' overall levels of social media use and critical thinking. A Pearson correlation analysis examined the relationship between the two variables. Regression analysis was also employed to identify which specific indicators of social media use (e.g., academic use, frequency of interaction with peers on social media) predict critical thinking skills. The quantitative results provided empirical evidence of the strength and nature of the relationship between social media use and critical thinking.

Ethical Considerations

This study adhered to ethical standards in educational research. Informed consent was obtained from all participants, and they were assured of their confidentiality and the voluntary nature of their participation. The data were anonymized, and all personal identifiers were removed to protect the students' privacy. Moreover, the results were used solely for academic purposes and not shared outside the research team.

RESULTS AND DISCUSSION

Extent of Social Media Use

The data in Table 1 reveals that SHS learners exhibit high social media engagement, with over 80% of students indicating daily use, primarily on platforms like Facebook, Instagram, and TikTok (López, 2023). This aligns with global trends that social media plays a central role in adolescents' daily lives (Hussain *et al.*, 2022). Notably, 65% of students also reported using social media for academic purposes, signifying its educational utility (Saad *et al.*, 2022). This suggests that social media is not only for leisure but is increasingly a medium for learning and academic collaboration.

Table 1: Social Media Use among SHS Learners

Social Media Usage Frequency	Percentage of Students
Daily Usage	80%
Academic Use	65%
Non-academic Use	40%
Occasional Usage	20%

However, 40% of participants mentioned that their social media use was predominantly for entertainment, contributing to a lack of focus during academic tasks (Al-Shaikh *et al.*, 2023). This indicates that excessive non-academic use can detract from students' academic performance, supported by Zhou and Lee (2021), who found that prolonged engagement with non-educational social media content can result in cognitive overload and procrastination. Thus, unchecked social media use may pose significant challenges to focus and productivity despite its academic potential.

While the data shows that social media is essential to SHS learners' lives, its role in academic performance is not straightforward. Positive academic outcomes are linked to purposeful social media use, such as for study groups or accessing educational resources, while non-academic use can impede learning (Zhou & Lee, 2021). Effective use of social media depends on its purpose and context, with educational engagement providing significant benefits for cognitive development (Hussain *et al.*, 2022). Therefore, educators should guide students toward using social media for academic collaboration rather than solely for entertainment purposes.

Level of Critical Thinking Skills

Based on Table 2, the majority of SHS learners

demonstrated moderate to high levels of critical thinking, with an average score of 72% on the California Critical Thinking Skills Test (CCTST), aligning with previous research that critical thinking improves during high school (Gagnon, 2021). Furthermore, 60% of students reported engaging in reflective thinking when faced with academic challenges, highlighting their ability to analyze and evaluate information critically (Cheng *et al.*, 2022). These results suggest that SHS learners have developed some critical thinking capacity.

Table 2: Level of Critical Thinking Skills of SHS Learners

Critical Thinking Scores	Percentage of Students
High (above 75%)	40%
Moderate (60-75%)	30%
Low (below 60%)	30%

However, 30% of students scored below the expected threshold, indicating that some learners still face difficulties in critical thinking tasks, such as analyzing arguments and drawing conclusions (Bensley *et al.*, 2020). This discrepancy suggests that not all students receive the necessary support or training to develop these skills effectively. As Fisher and Scriven (2021) point out, critical thinking is a skill that requires explicit teaching, and its absence in the curriculum could lead to underdeveloped cognitive abilities in a significant portion of students. Although most SHS learners exhibit moderate to high critical thinking skills, the scores' variability indicates room for improvement. The findings suggest that while some students have mastered reflective thinking, others may require more focused instruction to fully develop these skills (Gagnon, 2021). Educators should ensure that critical thinking is integrated across subjects and that students receive sufficient opportunities to practice these skills in diverse contexts (Bensley *et al.*, 2020). By doing so, educational systems can support all learners in reaching their full cognitive potential.

Test of Relationship between the Extent of Social Media Use and the Critical Thinking Skills

The analysis shown in Table 3 found a statistically significant positive correlation between academic social media use and critical thinking ($r = 0.45$, $p < 0.01$), suggesting that students who engage in academic activities on social media demonstrate higher critical thinking skills (Al-Rahmi *et al.*, 2022). This is consistent with research by Kim *et al.* (2021), which suggests that online platforms provide opportunities for collaborative learning, thereby fostering higher-order cognitive skills. This indicates that

Table 3: Significant Social Media Predictors of Critical Thinking Skills of SHS Learners

Correlation between Social Media Use and Critical Thinking	r-value
Academic Use	0.45
Non-academic Use	-0.33

social media can be a tool for enhancing critical thinking when used purposefully.

On the other hand, the correlation between total time spent on social media, including non-academic use, and critical thinking was negative ($r = -0.33$, $p < 0.05$). This suggests that excessive non-academic use of social media is associated with lower critical thinking scores, potentially due to distractions and reduced focus (Zhou & Lee, 2021). Research by Ang and Zaphiris (2021) further supports this finding, indicating that passive social media consumption can hinder cognitive processes and attention, negatively impacting students' academic performance.

These mixed findings highlight the importance of context in social media use. While academic social media engagement fosters critical thinking, non-academic use can detract from cognitive development. This underscores the need for intentional guidance in how students engage with social media, ensuring they focus on educational purposes to maximize the benefits of critical thinking (Al-Rahmi *et al.*, 2022). Educators and parents can play a crucial role in helping students balance productive and recreational uses of social media.

Indicators of Social Media Use that Significantly Predict Critical Thinking Skills

The regression analysis in Table 4 indicates that academic use of social media significantly predicts critical thinking ($\beta = 0.21$, $p < 0.01$), accounting for 21% of the variance in critical thinking scores. This finding aligns with previous studies showing that social media can stimulate cognitive processes like analysis and evaluation when used for educational purposes such as accessing resources or engaging in discussions (Hussain *et al.*, 2022). Peer interactions on these platforms were also found to predict higher critical thinking, emphasizing the collaborative potential of social media (Zhou & Lee, 2021).

Table 4: Significant Social Media Predictors of Critical Thinking Skills of SHS Learners

Predictors of Critical Thinking	β -value	p-value
Academic Use	0.21	<0.01
Peer Interactions	0.15	<0.05
Entertainment Use	-0.05	0.28

However, time spent on social media for entertainment did not significantly predict critical thinking ($\beta = -0.05$, $p = 0.28$). This suggests that merely spending time on social media without an educational focus does not contribute to developing critical thinking skills (Al-Shaikh *et al.*, 2023). These findings challenge the assumption that social media usage generally improves cognitive skills, highlighting the necessity of structured and purposeful engagement (Zhou & Lee, 2021).

In sum, social media use for academic purposes, particularly peer collaboration, significantly predicts critical thinking development. The lack of significant findings for entertainment use underscores the need

for targeted strategies in guiding students to use social media for learning rather than entertainment. This also reinforces the idea that while social media can be a valuable tool, its effectiveness depends on how it is used (Hussain *et al.*, 2022; Al-Shaikh *et al.*, 2023).

CONCLUSIONS

In conclusion, this study examined the relationship between social media use and critical thinking skills among Senior High School (SHS) learners, revealing positive and negative outcomes based on how social media is used. The findings indicate that while most SHS learners engage with social media extensively, their use tends to be primarily for entertainment, with minimal use for academic activities. Despite this, a significant positive correlation was found between academic social media use and critical thinking skills, suggesting that educational engagement on social platforms can enhance students' cognitive abilities. This aligns with previous research that emphasizes the potential of digital platforms to promote higher-order thinking when used purposefully (Greenfield, 2015; Smith & Rupp, 2020).

Moreover, the study identified that frequent participation in academic discussions and knowledge-sharing on social media was a significant predictor of enhanced critical thinking. At the same time, passive use showed no such impact. These results highlight the importance of guiding students toward purposeful social media use to maximize cognitive benefits. The findings suggest that educators and parents should encourage educational interactions on social platforms and provide structured guidance to avoid the adverse cognitive effects of excessive or non-academic social media engagement (Jones *et al.*, 2019; Zhao & Lee, 2021). By focusing on the academic potential of social media, students can better develop the critical thinking skills needed for academic and real-world success.

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