

# Exploring the Impact: Social Media Platform Usage and Academic Performance among High School Students in North 24 Parganas District, West Bengal

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## Abstract

In recent years, the prevalence of social media use among high school students has risen dramatically, raising concerns about its potential impact on academic performance. Social media platforms offer unprecedented opportunities for connectivity and information sharing, yet they also pose risks, particularly concerning addiction. This study investigates impact of social media platform usage on academic performance among high school students in North 24 Pargana district. With the increasing prevalence of social media in students' lives, it has become important to understand its impact on educational outcomes. Using a mixed-methods approach, researcher collected quantitative data through a survey measuring students' time spent on various social media platforms, along with their academic performance. The results indicate a negative relationship between time spent on social media platforms and academic performance, particularly among students who reported using the platform for entertainment rather than educational purposes. Differences in effect based on demographic factors including age, sex, and socioeconomic status were also observed. While findings suggest that social media can provide educational benefits, excessive use is often associated with decreased academic engagement and lower performance. This study contributes to the understanding of how patterns of social media use affect academic achievement and highlights the need for targeted interventions to promote balanced media use among high school students. Recommendations for educators and parents are proposed to mitigate the negative effects of social media on academic performance, ultimately creating a more appropriate learning environment.

**Keywords** Social Media Platform, Academic Performance, Students Attitude, Gender, subject-stream.

## Introduction

In recent years, the prevalence of social media use among high school students has risen dramatically, raising concerns about its potential impact on academic performance. Social media platforms offer unprecedented opportunities for connectivity and information sharing, yet they also pose risks, particularly concerning addiction. This research aims to exploring the impact of social media platform usage on academic performance among high school students in North 24 Pargana district. Social media has become an integral part of everyday life for many teenagers, providing unprecedented opportunities

for connection, information sharing and self-expression. However, concerns have arisen about its potential impact on academic performance among high school students.

In the Present day, Social media platforms like Face book, Instagram, Twitter and LinkedIn YouTube, WhatsApp, etc. have become a way of life. Anyone cannot imagine daily life without the presence of Social media platforms. The first thing in the morning that almost everyone does is to check notifications on his/her subscribed social media platforms and continues to do so intermittently throughout the day until sleeping at night, (Financial Express (2018). Social networking has become an international trend and it has spread its reach to almost every corner of the globe. This advancement brings a major concern in this era of massive technological development; Social networking sites are becoming more and more popular among students (Hasnain et al., 2015). also noted that these technologies have facilitated social communication and enabled discussion among its participants. Social media has found huge applications in many fields and higher education is one of the beneficiaries. Social networking services such as Face book, Twitter, and MySpace are common applications of Web 2.0 technologies that have gained wide popularity and widespread use in higher education in the past few years among multiple age groups in the same or different educational institutions, locations, and countries. (Mbodila, et al, 2014). Recent studies show that while social media can improve social interaction and facilitate learning, excessive engagement can lead to addictive behaviours. Social media usage is characterised by compulsive use, withdrawal symptoms, and negative consequences for everyday life functioning, including academic pursuits. Understanding these dynamics is critical for educators and policymakers seeking to help students navigate the digital environment while maintaining academic success .This study synthesises the existing literature on social media addiction and academic performance, emphasising the need for digital literacy education and balanced media use among adolescents. By exploring empirical data, this study aims to contribute to evidence-based strategies for promoting healthy technology use and optimising educational outcomes for high school students in the digital age.

### **Related literature work**

Kaplan and Haenlein (2010) Social media can improve academic performance by facilitating communication and common content sharing, but it also creates challenges such as distraction and addiction. The design of social media as a social networking tool can lead students to use it for non-academic discussion (Arnold & Paulus, 2010), which may negatively impact academic performance. Academic performance of Facebook users has been shown to be worse than that of non-users or other social media networks (Kirschner & Karpinski, 2010). However, some research suggests that social media can improve vocabulary and writing skills. According to Kaplan and Haenlein (2010), social media can be classified into six categories: social networking sites (Facebook, Twitter, LinkedIn, Instagram), blog sites (blogging sites), content communities and groups (YouTube, Slideshare), gaming sites (virtual Worlds), and companion content sites (Wikipedia). Massive Open Online Courses (MOOCs) have gained popularity since the 2020s due to the Covid-19 pandemic, providing flexible learning opportunities for students (Chen, 2013). However, security and privacy concerns remain significant worries. Teachers are concerned about using social media for knowledge sharing (Fedock et al., 2019). 72% are reluctant due to integrity issues and 63% affirm the need for stricter security measures. Effective use of social media in academia requires proper training in security and privacy for both students and faculty.

**Objectives**

The objectives of this study are -

- O1. To compare social media usage time between rural and urban high school students in North 24 Pgs district, West Bengal.
- O2. To compare social media usage time between male and female high school students in North 24 Pgs district, West Bengal..
- O3. To compare academic performance between male and female high school students in North 24 Pgs district, West Bengal.
- O4. To know the most used social media platforms by high schools students in North 24 Pgs district, West Bengal.
- O5. To find out the causes of social media usage and students academic performance in North 24 Pgs district, West Bengal.
- O6 To explore the relationship of social media engagement and academic performance of high schools students in North 24 Pgs district, West Bengal.
- O7. To determine academic performance between arts, science and commerce streams students in North 24 Pgs district, West Bengal..
- O8.To correlate with social media using time of different stream students and their academic performance.
- O9 To find out the relationship between social media usage time of different samples and academic performance.

**Research Question**

1. What is the difference in social media usage time between rural and urban high school students in North 24 Pgs district, West Bengal.?
2. What is the difference in social media usage time between male and female high school Students in North 24 Pgs district, West Bengal?
3. What is the academic performance between male and female high school students in North 24 Pgs district, West Bengal?
4. What are the most used social media platforms by high schools students in North 24 Pgs district, West Bengal?
5. What are the causes of social media usage and academic performance of high schools students in North 24 Pgs district, West Bengal.?
6. What is the relationship between social media engagement and academic performance of students in North 24 Pgs district, West Bengal?
7. What are the academic performance between arts, science and commerce stream students in North 24 Pgs district, West Bengal?
8. What is the relationship between social media using time of different stream students and their academic performance?
9. What is the relationship between social media usage time of different samples and academic performance?

**Methodology**

A descriptive correlation approach was used to explore the impact of social media platform usage and

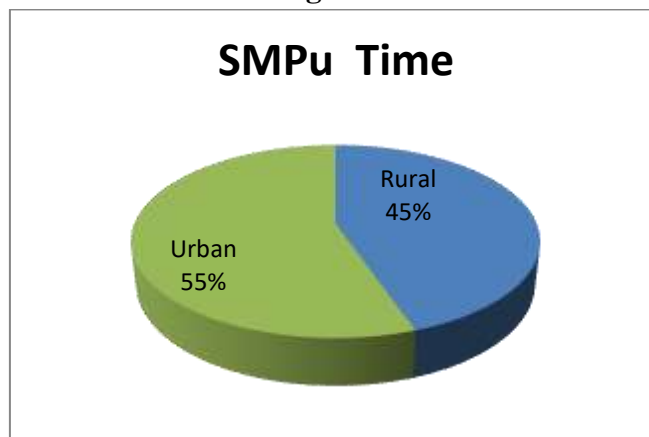
academic performance among higher secondary level students in North 24 pgs districts, West Bengal. In this study all the students of higher secondary level of North 24 Parganas district were considered as population. The data of this research was collected from 100 students of different higher secondary schools of North 24 Parganas district by stratified random sampling technique. The researcher has collected data from a certain sample size through electronic media by creating a structured questionnaire. In this study independent variable is social media platform usage, and dependent variable is academic performance of students and control variables are geographical address, age, gender, study habit etc. The stated methodology aims to systematically investigate the relation between social media platform usage ( SMPu) and Academic performance(AP) among higher secondary level school students in N24pgs district. Using rigorous methodology, this study provides valuable insights into the effects of social media use on educational outcomes. This structured method will guide the research process, clarity, reliability and validity in addressing the research questions.

**Results and Discussion**

**Table -1 SMPu time between Rural and Urban High School Students,**

	No. of students	Mean
Rural	50	2.489796
Urban	50	3.08

**Figure-1**

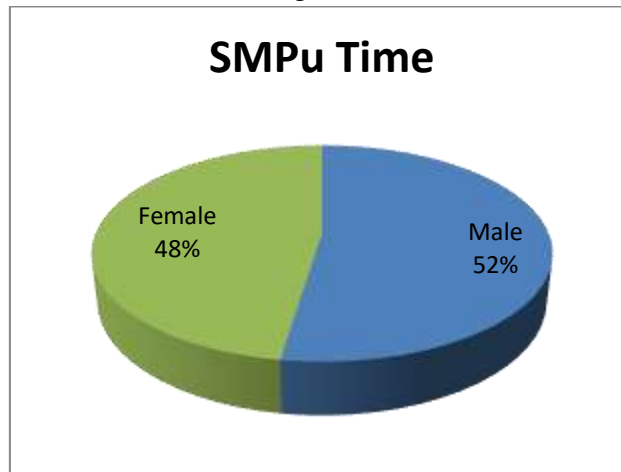


Interpreting these findings in terms of the research question, the researcher observed that urban students spend more time on social media on average than rural students. Specifically, urban students spend an average of 3.08 hours per day on social media, while rural students spend 2.489796 hours. This difference indicates that urban students may have greater access to, and possibly more engagement in, social media platforms than their rural peers.

**Table-2, SMPu time between male and female high school Students**

	No. of Students	Mean
Male	50	2.891892
Female	50	2.626667

Figure-2



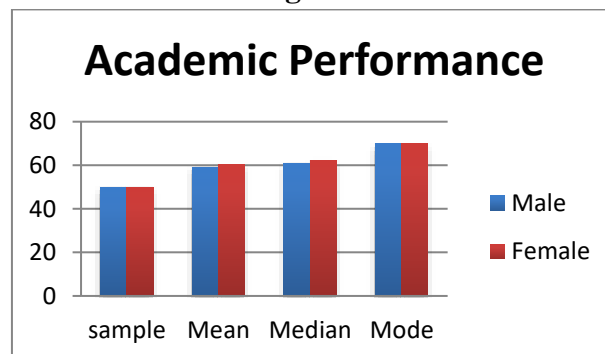
According to the data, the researcher observes the following:

Differences in Usage Time: Male students spend more time on social media on average (2.89 hours) than female students (2.62 hours). Magnitude of difference: The difference in average time of use between men and women is about 0.27 hours. From these results, it appears that male students, on average, spend slightly more time on social media than female students. This difference, although statistically significant in this sample, indicates a trend where male students may have a slightly higher engagement with social media platforms than their female peers.

Table3-Academic performance between Male and Female

	Sample	Mean	Median	Mode
Male	50	59.19	61	70
Female	50	60.53333	62	70

Figure 3

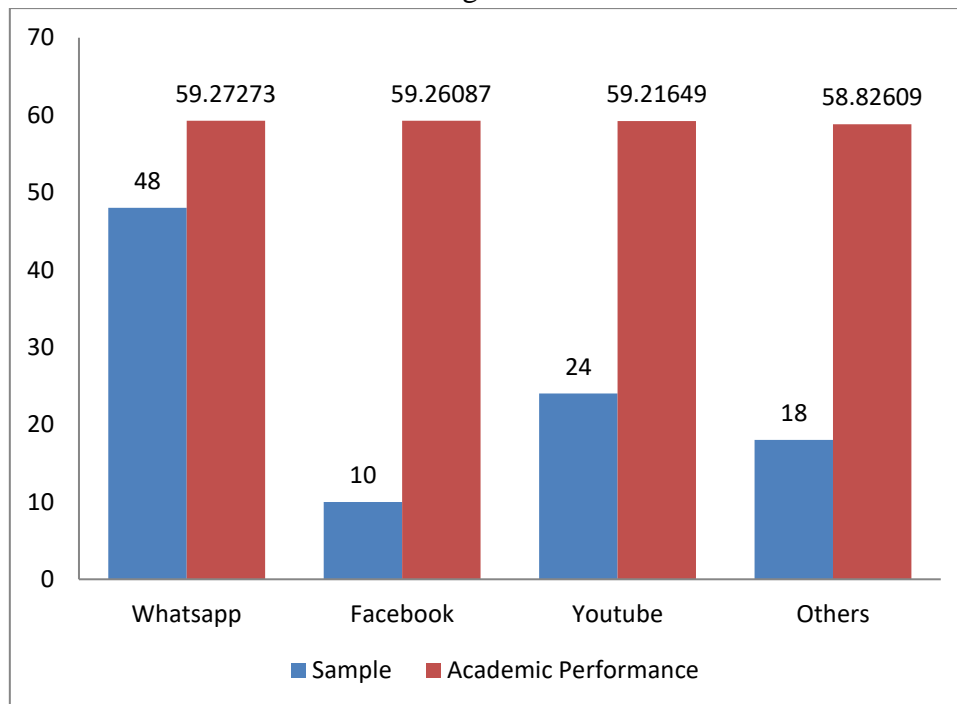


The average academic performance of female students (60.53) is slightly higher than male students (59.19). Females have a slightly higher mean score, indicating a trend toward higher academic performance in the intermediate range.

**Table-4, Most used social media platforms**

Most used social media platform	Sample	Academic Performance
		Mean
WhatsApp	48	59.27273
Facebook	10	59.26087
Youtube	24	59.21649
Others	18	58.82609

Figure 4



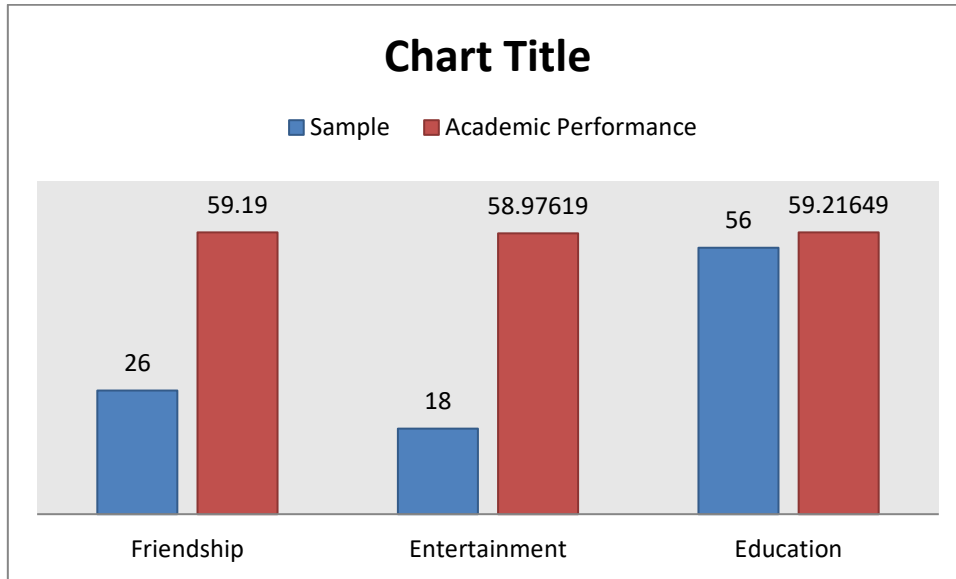
The average of academic performance across different social media platforms is relatively similar, ranging from about 58.82 to 59.27. Based on these results, although WhatsApp and YouTube are more popular among high school students, there is no clear indication that social media platform choice has a significant impact on academic performance. Academic performance means are similar across platforms studied, suggesting that factors other than social media use may play a more important role in determining academic outcomes among high school students.

**Table-5, Causes of social media usage and academic performance**

Causes of social media usage	No of Students	Academic Performance
		Mean
Keeping in touch with	26	59.19

friend		
Entertainment	18	58.97619
Education	56	59.21649

Figure 5



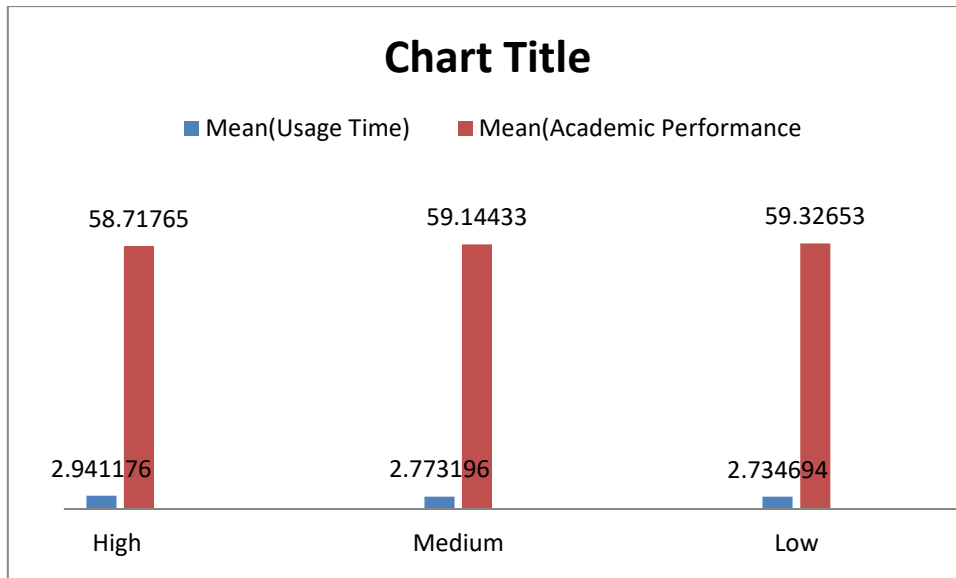
Students who use social media primarily for educational purposes have the highest academic performance mean (59.21649). This study suggests that using social media platforms for educational activities may have some positive effect on academic performance, although the difference is minimal compared to other types of use. Use of social media to keep in touch with friends- This group has a slightly lower academic performance average (59.19) than those who use it for education. But the difference is very small. Use of social media for entertainment- Students who use social media for entertainment have the lowest mean academic performance (58.97619). This study suggests that spending more time on social media for recreational purposes may have a slightly negative effect on academic performance. The data suggest that there is little variation in academic performance among students based on the primary purpose of using social media. Those who use it mainly for educational purposes tend to have slightly higher academic performance, while those who use it for recreational purposes show slightly lower academic performance.

Table-6 relationship between social media engagement and academic performance

User	No of Students	Mean(Usage Time)	Mean(Academic Performance)	r
High	23	2.941176	58.71765	-0.78733
Medium	25	2.773196	59.14433	-0.76935

Low	52	2.734694	59.32653	-0.77031

Figure 6



Overall Trend- Across all three groups (high, medium, and low social media users), there is a consistent negative correlation between social media usage time and academic performance. This indicates that as social media usage increases, academic performance trends to decrease.

1. High Users- High users have the highest mean time on social media (2.94117 hours) and the lowest mean academic performance (58.71765). The correlation coefficient of -0.78733 suggests a strong negative relationship, meaning high social media use is likely significantly associated with poorer academic performance.
2. Medium Users- Medium users spend slightly less time on social media (2.773196 hours) and their average academic performance (59.14433) is slightly higher than high users. A correlation of -0.76935 indicates a strong negative relationship, although slightly less pronounced than high users.
3. Low Users- Low users spend the least time on social media (2.734694 hours) and have the highest academic performance average (59.32653). The correlation coefficient of -0.77031 shows a similar strong negative relationship to that seen among moderate users, indicating that low social media use is associated with better academic outcomes.

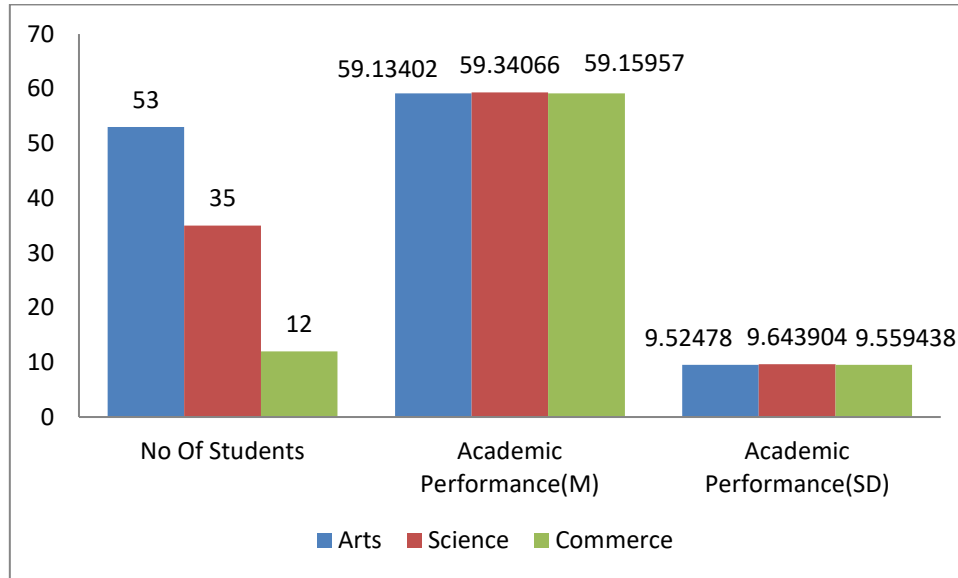
**Table7- Stream wise Academic Performance**

Stream	No of Students	Academic Performance(Mean& SD)	
Arts	53	59.13402	9.52478
Science	35	59.34066	9.643904



Commerce	12	59.15957	9.559438
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**Figure 7**



1. Mean Comparison- The average academic performance scores of the three streams are relatively close to each other, suggesting that there is no significant difference in overall academic performance among students of Arts (59.13), Science (59.34), and Commerce (59.10). A slight variation in the means indicates that all streams have a similar level of average academic achievement
2. Standard Deviation Analysis -The standard deviations are similar for all three streams from 9.52 to 9.64. This suggests that variability in academic performance within each stream is comparable. A smaller standard deviation would indicate that students' scores are more closely clustered around the mean, while a larger one would indicate greater variability. Here, similar standard deviations imply that the academic performance scores are consistently distributed across streams.
3. Sample Size Consideration - The sample sizes vary considerably, with the arts stream having the largest sample (53 students), followed by science (35) and commerce (12).
4. Overall Insights - Although there are slight differences in average academic performance, they are not statistically significant due to close values. It can be inferred that high school students in Arts, Science and Commerce streams perform similarly academically on average.

**Table8- RRelationship between social media using time of different stream students and their academic performance.**

Stream	r
Arts	-0.77092
Science	-0.7679

Commerce	-0.76859
Commerce	

1. **Negative Correlation:** All three streams demonstrate a negative relationship between social media use time and academic performance. This indicates that academic performance decreases as time spent using social media increases.
2. **Strength of Correlation:** Correlation values of the three streams are close to -0.8, suggesting a strong negative relationship. A correlation of -1 indicates a perfect negative relationship, while -0.7 to -0.9 indicates a strong negative relationship. Among streams, Arts stream shows maximum negative correlation (-0.77092), closely followed by Commerce (-0.76859) and Science (-0.7679).
  - **Arts Stream:** The strongest negative relationship suggests that students from Arts stream may be more adversely affected by increased use of social media in terms of their academic performance compared to other streams.
  - **Commerce and Science Streams:** Although the negative correlations in commerce and science are also strong, they are slightly lower than in the arts stream, indicating that students in these streams may experience a slightly lesser degree of negative impact from social media use. Based on the analysis, there is a clear negative relationship between social media usage time and academic performance across all three subject streams. This implies that more time spent on social media is associated with lower academic performance, with the arts stream showing the most pronounced effect.

**Table9- Relationship between social media usage time of different samples and academic performance**

Variable	Quantity of sample	Correlation with Social Media usage Time and Academic Performance
Rural Male	25	-0.77004
Rural Female	25	-0.32552
Urban Male	25	-0.78653
Urban Female	25	-0.62129
Rural	50	-0.77004
Urban	50	-0.74643
Male	50	-0.77004
Female	50	-0.72007

The data indicate a clear trend that increased social media use is associated with decreased academic performance across all populations, with different levels of impact:

1. Strongest effect: Urban males and rural males have the strongest negative correlation.
2. Medium effect: Urban females show a moderate effect, while rural females show the weakest correlation.
3. Gender differences: Negative effects of social media on academic performance The effect is more pronounced in males than in females, suggesting that interventions to manage social media use may be particularly necessary for male students. , suggesting that urban environments may lead students to greater distraction or potentially more intensive social media engagement.

## Conclusion

This study explains the subtle relationship between the use of social media platforms and the academic performance of students at higher secondary level. Social media provide valuable opportunities for engagement, collaboration, and information exchange, but their impact on academic performance is multifaceted. Excessive or uncontrolled use can be distracting, reduce study time, and distract, which negatively affects academic performance. Conversely, strategic and purposeful use of social media can enhance learning by providing educational resources, facilitating peer support, and sharing academic content. Educational institutions and policymakers should consider integrated strategies to guide students in balancing their social media use with academic responsibilities. By fostering a supportive environment and promoting digital literacy, it is possible to reap the benefits of social media while mitigating its potential drawbacks. Future research should further explore this dynamic and develop practical interventions to optimize the role of social media in enhancing the educational experience.

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