

Correlation Between Social Media Usage and Academic Performance Among Students

Mantasha Khan[#], Pooja Ghanshyam[#], Shrawani Adbal[#], Diksha Bhadange[#],
Suparna Deepak^{*}

Department of Biotechnology, Pillai College of Arts, Commerce and Science (Empowered Autonomous), New Panvel, Navi Mumbai, India.

[#]Equal contribution by authors; ^{*}Corresponding author

^{*}suparnadeepak@mes.ac.in

Abstract

This study looks at how social media use relates to academic performance in a sample of 217 students spanning higher secondary through postgraduate education, drawn from a larger pool of survey responses after duplicates and internally inconsistent entries were removed. Most respondents felt social media had worked against their academic performance, and that feeling was strongest among postgraduates (80.4 percent) and weakest among undergraduates (55.8 percent). Students who spent more than three hours a day on social media reported somewhat more negative impact than lighter users (69.3 percent versus 56.2 percent), but the gap was modest enough to suggest that time spent online, by itself, is not doing much of the explanatory work. Age was essentially unrelated to how harmful students perceived the effect to be. The central test of the study—a Spearman correlation between total scores on an adapted Social Media Use Integration Scale (SMUIS) and self-reported academic-performance category—turned up no meaningful relationship (Spearman rho of 0.006 and p value of 0.926). What did line up were the study-habit measures: assignment completion, attendance, and time management moved together and were negatively correlated with perceived harm. Taken together, the results point toward study discipline and everyday habits, rather than hours online or emotional attachment to the platform, as the stronger correlate of perceived academic harm.

Keywords—*Social media usage; academic performance; SMUIS; study habits; students; social media integration*

I. INTRODUCTION

Social media is no longer a side activity for most students—it is woven into how they talk to each other, look things up, and fill their downtime. Apps like Instagram, WhatsApp, YouTube, and Facebook offer real value for networking, entertainment, and even learning, but they also pull on the same pool of time and attention that coursework needs. As smartphones and cheap data have become the norm, the hours young people spend on these platforms have climbed steadily, and with that has come a persistent question: is this shift helping students academically, or quietly working against them?

That question has pulled in educators, parents, and researchers alike, and the answers on offer point in different directions. Some work highlights the upside—social platforms can support collaborative learning, fast access to information, and peer support [1], [2]. Other studies emphasize the downside: distraction, procrastination, and shrinking attention spans, especially once usage stops being purposeful and starts being habitual or emotionally driven [3], [4], [8], [18]. Beyond simple screen time, researchers have also started asking about the psychological side of the relationship—whether students feel emotionally tied to checking their accounts, and how that pull connects to things like attendance, finishing assignments, and exam prep [5], [6], [12].

Comparable patterns linking social media habits to study routines have turned up among high school students as well [13].

Despite all this attention, the evidence remains mixed [7], [9], [11], [14], [19], and much of it doesn't clearly separate two things that tend to get lumped together: how long someone is on social media, and the underlying habits and emotional patterns that might be driving both the usage and the academic outcome. This study tries to pull those threads apart using survey data from 217 students across different educational levels—looking not just at how usage duration tracks with perceived academic harm, but also at how age, gender, study habits, and emotional connection to social media relate to students' self-reported outcomes.

The rest of the paper is organized as follows. The methodology section walks through how the survey was built and run. The results section lays out the main findings—patterns by education level, usage duration, age, and the correlations among the academic and behavioral variables. The discussion places those findings against the existing literature, and the conclusion pulls together the main takeaways and points to where future work could go next.

II. METHODOLOGY

A. Research Design

The study takes a quantitative, descriptive-correlational approach. A cross-sectional survey was used to examine how social media usage, study habits, emotional connection to social media, and academic performance relate to one another among students.

B. Source of Data

Both primary and secondary data were used. Primary data came from a structured questionnaire administered through Google Forms; secondary data were drawn from journals, articles, and other published research on social media use and academic performance.

C. Population of the Study

The population consists of students across educational levels—higher secondary, undergraduate, and postgraduate—who are active social media users.

D. Sampling Technique

A convenience sample of student social media users was recruited through an online questionnaire distributed via Google Forms. Social media integration was measured with a 10-item version of the Social Media Use Integration Scale (SMUIS), adapted by swapping references to Facebook for “social media” [16]. The SMUIS is a standardized instrument, originally developed and validated by Jenkins-Guarnieri et al. [16], and its reliability and validity were later supported in an independent sample using exploratory and confirmatory factor analyses [22]. Items used a six-point Likert scale from 1 (Strongly Disagree) to 6 (Strongly Agree), with the reverse-scored item recoded before totals were calculated. Academic performance was captured through participants’ self-reported latest-semester percentage category, and five researcher-developed items covered study habits: assignment completion, class attendance, exam preparation, concentration, and time management.

E. Sample Size

The Google Forms export contained 234 raw submissions. Eight were duplicate resubmissions from the same respondent, identified by matching names; the earlier of each pair was kept, leaving 226 distinct submissions. Of these, 222 consented to take part and 4 did not. Five more records were dropped because age, education level, and course/stream didn’t line up with each other (for example, an age of 10 or 15 paired with a PhD-level field)—a pattern that suggests invalid or non-genuine entries. That left a final analytic sample of 217 respondents. Two further records had an implausible age value (such as 2 or 7705) alongside otherwise sensible answers; these were kept in the sample, with age treated as missing for that respondent only.

F. Variables of the Study

Social media usage serves as the independent variable and academic performance as the dependent variable. Five researcher-developed study-habit items—assignment completion, attendance, exam preparation, concentration, and time management—along with SMUIS-measured emotional connection to social media, are treated as related behavioral variables in this relationship.

G. Data Analysis

Data were analyzed in Google Colaboratory, a cloud-based Python environment. Descriptive statistics, cross-tabulation, and Spearman rank correlation were used throughout, since the academic-performance variable is an ordered category rather than a continuous score.

H. Limitations of the Study

Findings are limited to respondents reached through the online questionnaire and may not generalize to the wider student population. Convenience sampling can limit representativeness and introduce bias, and self-reported measures of academic performance and social media use may be affected by recall or reporting bias.

III. DATA ANALYSIS AND INTERPRETATION

TABLE I. DEMOGRAPHIC CHARACTERISTICS OF RESPONDENTS (N = 217)

Characteristic	n	%
Gender		
Female	123	56.7
Male	91	41.9
Prefer not to say	3	1.4
Education Level		
Higher Secondary	45	20.7
Undergraduate	95	43.8
Postgraduate	46	21.2
Other / Diploma / Below Higher Secondary	31	14.3
Age (years)		
Median	20	—
Interquartile range (approx., pooled)	18–22	—

Note. Percentages are of the final analytic sample (N = 217) and may not sum to exactly 100% due to rounding. The age interquartile range is pooled across the negatively-affected and not-negatively-affected subgroups.

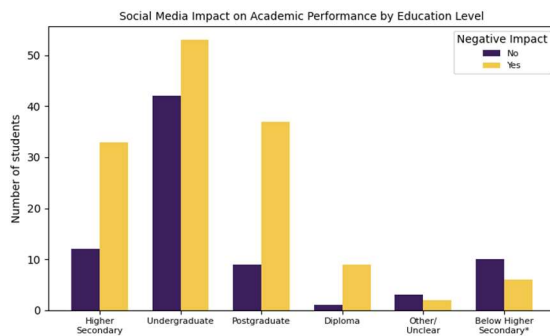


Fig. 1. Social Media Impact on Academic Performance by Education Level.

Result: More students reported a negative impact than not in every main education group, most clearly among postgraduates (80.4%) and higher secondary students (73.3%), and least among undergraduates (55.8%).

Across the three main education levels in this study, a clear majority of students at every level felt social media had hurt their academic performance—most strongly among postgraduates (37 of 46, about 80.4%), then higher secondary students (33 of 45, about 73.3%), and least among undergraduates (53 of 95, about 55.8%). A further 31 respondents fell outside these three groups: 16 were below the higher-secondary level defined here, 10 reported a diploma, and 5 gave education-level answers too ambiguous to classify (for instance, entering a course name instead of a level). These are shown separately in Fig. 1 rather than folded into the main categories. On the whole, the sense that social media works against academic performance seems fairly widespread rather than concentrated in any one group.

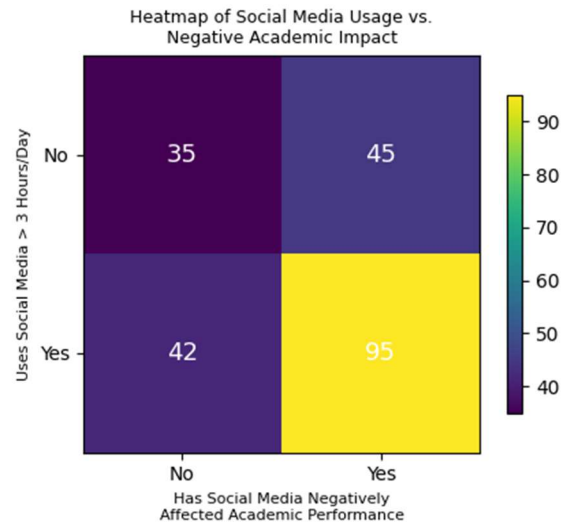


Fig. 2. Heatmap of Social Media Usage vs. Negative Academic Impact

Result: Negative impact was reported by 69.3% (95 of 137) of students using social media for more than three hours a day versus 56.2% (45 of 80) of lighter users, a modest gap of about 13 percentage points.

Among students who used social media for more than three hours a day, 69.3% reported a negative academic impact, versus 56.2% of lighter users. That roughly thirteen-point gap is real, but smaller than it might first appear—well over half of even the lighter users still reported feeling harmed. In other words, usage duration by itself only weakly predicts whether a student believes social media has hurt their academics, which fits the broader pattern in this study that perceived harm doesn't scale neatly with time spent online.

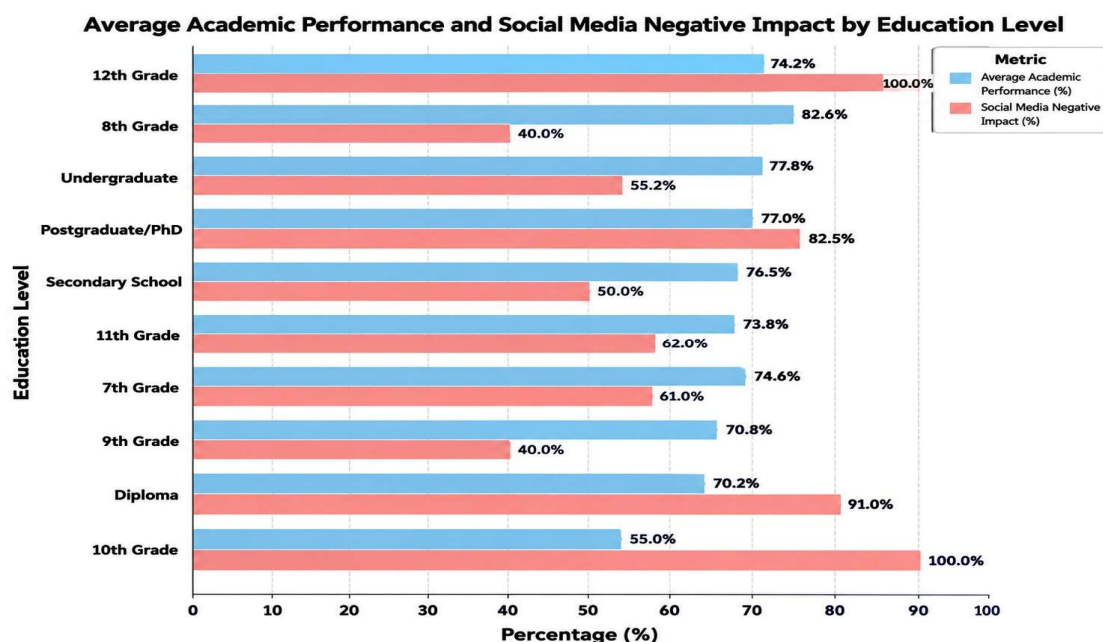


Fig. 3. Average Academic Performance and Social Media Negative Impact by Education Level

Result: Average performance stayed mostly within 70–83% (lowest in 10th grade at 55.0%), while perceived negative impact ranged from 40.0% to 100.0%, showing no consistent link between higher performance and lower perceived harm.

Fig. 3 compares average self-reported academic performance with the share of students reporting a negative social media impact at each education level. Average performance stayed within a fairly narrow band for most groups, roughly 70–83%, and was highest among 8th graders (82.6%), undergraduates (77.8%), postgraduate/PhD students (77.0%) and secondary school students (76.5%); the clear exception was 10th grade, at 55.0%. Perceived negative impact varied far more, from 40.0% among 8th and 9th graders to 100.0% among 10th and 12th graders, with diploma students (91.0%) and postgraduate/PhD students (82.5%) also high and undergraduates at 55.2%. Higher performance did not go together with lower perceived harm: postgraduate/PhD students combined a high average (77.0%) with one of the highest impact shares, whereas 8th graders had the highest average but among the lowest impact shares. Only in 10th grade did the lowest performance coincide with the highest perceived harm. Since the chart does not show group sizes, the extreme values (100%) should be read cautiously, as descriptive patterns rather than firm differences between levels.

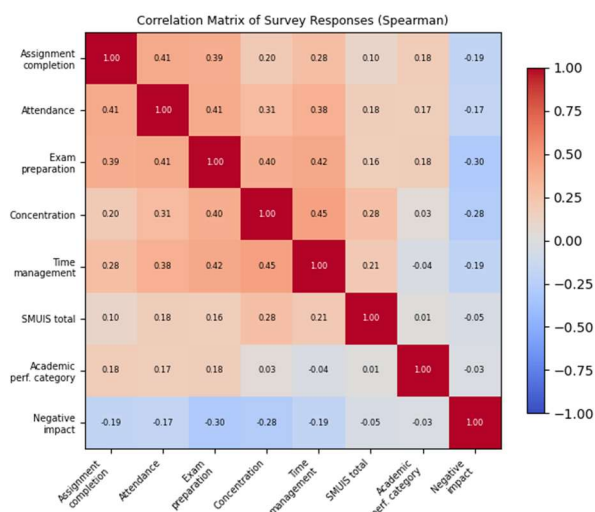


Fig. 4. Correlation Matrix of Survey Responses

Result: Study-habit items correlated moderately with one another and negatively with perceived impact ($\rho = -0.17$ to -0.30), whereas SMUIS total showed essentially no correlation with academic performance ($\rho = 0.006$) or perceived impact ($\rho = -0.047$).

The five study-habit variables—assignment completion, class attendance, exam preparation, concentration, and time management—were moderately correlated with one another (roughly 0.20–0.46), meaning students who kept up good habits in one area tended to do so across the board. Self-reported academic-performance category, on the other hand, was only weakly tied to any single habit (roughly 0.03–0.19, with concentration and time management essentially uncorrelated with it), so no single habit is doing much heavy lifting on its own. SMUIS total score—the study’s main measure of emotional attachment to social media—was only weakly related to the study-habit variables (0.10–0.28) and showed next to no relationship with either academic-performance category ($\rho = 0.006$) or perceived negative impact ($\rho = -0.047$), neither of which reached significance. By contrast, students who reported a negative impact showed weak-to-moderate negative correlations with the study-habit variables (roughly -0.17 to -0.30)—reinforcing the idea that perceived harm tracks study discipline more than it tracks SMUIS-measured integration.

IV. RESULT

Of the 234 raw submissions, 98.3% consented to participate. After removing duplicate resubmissions and five internally inconsistent records, the final analytic sample stood at 217 respondents, skewed slightly female (56.7% vs. 41.9% male, 1.4% preferring not to say). A majority across every education level reported that social media had worked against their academic performance, most notably postgraduates (80.4%), followed by higher secondary (73.3%) and undergraduate students (55.8%). Heavier users—those online more than three hours a day—reported negative impact more often (69.3%) than lighter users (56.2%), though the size of that gap points to only a weak link between usage duration and perceived harm on its own. Age showed no meaningful relationship with perceived impact; both affected and unaffected groups shared a median age of 20.

The study’s central test—a Spearman correlation between SMUIS total score and academic-performance category—turned up no meaningful association ($\rho = 0.006$, $p = 0.926$, $n = 217$). SMUIS total was likewise unrelated to whether students reported a negative academic impact ($\rho = -0.047$, $p = 0.492$). Looking at the secondary variables, the five study-habit items were moderately correlated with each other ($\rho = 0.20$ – 0.46), while self-reported academic-performance category showed only weak ties to any single item ($\rho = 0.03$ – 0.19 , not significant for concentration or time management). Students who reported negative impact showed weak-to-moderate negative correlations with the study-habit items ($\rho = -0.17$ to -0.30 , all $p < 0.05$)—suggesting perceived harm has more to do with study discipline than with social-media integration as the SMUIS captures it.

V. DISCUSSION

Taken as a whole, these results complicate the easy story that social media simply eats into study time and drags grades down with it. It’s true that most students—postgraduates especially—felt their academic performance had suffered because of it. But look more closely at the numbers, and the story shifts from how much time students spend online to how well they manage themselves once they’re there.

The usage-duration finding makes that point well. If time online were the main driver, we'd expect a much sharper split between heavy and light users in how harmful they felt the effect was. Instead, the gap was modest—about thirteen percentage points—and even lighter users reported feeling affected at a fairly high rate. That suggests the clock isn't the whole story: a student who spends four hours a day scrolling but still stays on top of coursework may end up feeling no worse off, in their own estimation, than one who spends a single hour but lets it eat into a deadline. What seems to matter more is how social media use fits into—or disrupts—a student's existing habits and routines, a pattern consistent with earlier work suggesting usage duration alone is often a weaker predictor of academic outcomes than how that time gets structured around existing study routines [4], [7], [8], [9], [17].

This is where the correlation analysis gets more interesting. Habit variables like attendance, assignment completion, and time management moved together fairly consistently—unsurprising, since students who are disciplined in one area tend to be disciplined in others. What stands out is that self-reported academic performance itself was only weakly tied to any single habit, while social media's perceived negative impact correlated more strongly with a breakdown across these habits than with usage patterns directly. Put differently, social media may matter less as a direct cause of poor grades and more as one of several things that surface once a student's overall study discipline starts slipping—a pattern that echoes meta-analytic findings that the link between social media behavior and academic achievement is often mediated by underlying study habits rather than acting as a direct effect [3], [20].

The study's central hypothesis, though, didn't hold up. The Spearman correlation between SMUIS total score and academic-performance category came out at essentially zero ($\rho = 0.006$, $p = 0.926$), and SMUIS total was similarly unrelated to whether students reported a negative impact ($\rho = -0.047$, $p = 0.492$). If anything, SMUIS total showed a weak positive relationship with the study-habit items ($\rho = 0.10$ – 0.28) rather than a negative one—meaning stronger emotional attachment to social media didn't coincide with weaker study habits in this sample. That runs against both the framing suggested by the paper's title and some of the mediation-based literature cited earlier [5], [6], [10], and it's worth stating plainly rather than reframing after the fact. A few explanations seem plausible, though none were tested directly here: the adapted 10-item SMUIS showed only modest internal consistency in this sample (Cronbach's $\alpha = 0.687$); self-reported academic-performance category is a coarse six-level measure that may miss a small true effect; and a cross-sectional, self-report design can't rule out that answers to the emotional-connection items and to the “negatively affected” item are drawing on different frames of reference altogether. What the data do support is a more modest claim: in this sample, perceived academic harm tracks self-reported study discipline—attendance, assignment completion, exam preparation—more closely than it tracks either time online or emotional connection to the platform as the SMUIS measures it.

The postgraduate finding deserves a closer look on its own. Nearly eight in ten postgraduate respondents felt harmed, well above the figures for undergraduates. A couple of explanations seem plausible, though neither was tested directly: postgraduate work may demand more sustained, independent

focus, so that even small distractions feel costlier when there's less structured classroom time to lean on; or postgraduate students may simply be more self-aware, or self-critical, about their habits given the more research-driven nature of their work, making them more likely to flag social media as a problem even where the actual behavioral difference is small. Similar patterns of heightened self-reported impact have shown up among medical and other postgraduate student populations elsewhere [1], [2].

None of this should be read as evidence that social media use is harmless. What it does suggest is that its relationship with academic outcomes involves several behavioral factors at once, and shouldn't be treated as a single variable to be blamed or fixed in isolation. In this sample, it appears to interact with—and possibly amplify—existing patterns of study discipline more than it operates through a distinct emotional-connection pathway, which showed no measurable relationship with either perceived harm or academic performance. That has a practical upshot too: interventions that focus purely on cutting screen time may miss the mark if the real issue is time management rather than raw hours online or emotional reliance on the platform—a point consistent with calls in the literature for interventions targeting engagement patterns and study habits rather than screen time alone [7], [21].

VI. CONCLUSION

This study set out to examine how social media use relates to academic performance, drawing on 217 students across educational levels after data cleaning. The picture that emerges is more complicated than a simple cause-and-effect story between screen time and grades. Most students, postgraduates especially, felt social media had worked against their academic performance, yet the actual amount of time spent online showed only a weak link to that perception. Study habits—time management, attendance, assignment completion—tracked much more closely with perceived academic harm than social media use did on its own.

The correlation analysis backed up part of this picture, but it also produced the study's most notable result: a Spearman correlation between SMUIS total score and academic-performance category—the relationship the paper's title points to most directly—showed no statistically significant association ($\rho = 0.006$, $p = 0.926$, $n = 217$), and SMUIS total was similarly unrelated to whether students reported a negative impact ($\rho = -0.047$, $p = 0.492$). The academic-habit variables did cluster together consistently and correlated negatively with perceived harm, but emotional connection to social media, as the SMUIS measures it, tracked with neither academic-performance category nor perceived harm in this sample. That points to social media's role in academic performance being better explained, at least in this dataset, through study discipline and usage patterns than through the emotional-connection dimension the SMUIS was built to capture.

These findings carry some practical weight for students, educators, and institutions. Rather than leaning only on limiting screen time, interventions may land better if they target study habits and time management directly—particularly for postgraduate students, who reported the highest perceived impact. Building stronger time-management skills and encouraging more intentional use of social media may do more for academic performance than restricting access on its own, an approach consistent with meta-analytic evidence that

behavioral and habit-based factors, more than usage alone, drive academic outcomes [3]. Encouraging mindful, purposeful engagement with social media has likewise been shown to soften its negative effects on academic performance [15].

The study has its limits. Self-reported data, convenience sampling, a cross-sectional design, and the adapted SMUIS's modest internal consistency in this sample (Cronbach's $\alpha = 0.687$) mean these findings reflect perceptions and associations rather than confirmed causal links, and may understate a true relationship that a more reliable instrument or a continuous performance measure could pick up. Longitudinal research using a validated, unadapted SMUIS [16], [22] could help clarify whether the null relationship found here between emotional connection to social media and academic performance holds up in other samples, or whether it reflects limitations specific to this study's measurement approach. Mediation-based longitudinal designs, similar to those used in prior work on social anxiety, fear of missing out, and mental health as mediators of the social media–academic performance relationship [5], [6], would suit this kind of follow-up well. A more balanced sample across genders and education levels would also help future findings generalize further.

Overall, this research adds to a growing body of evidence that social media's effect on academic performance has less to do with how much time students spend online and more to do with how that time interacts with their broader study habits and discipline. The hypothesized role of emotional connection to social media wasn't supported here and would benefit from further, more rigorously validated study.

REFERENCES

- [1] A. M. Alkhalaf, A. Tekian, and Y. S. Park, "The impact of WhatsApp use on academic achievement among Saudi medical students," *Medical Teacher*, vol. 40, sup. 1, pp. S10–S14, 2018.
- [2] E. AlFaris et al., "The pattern of social media use and its association with academic performance among medical students," *Medical Teacher*, vol. 40, sup. 1, pp. S77–S82, 2018.
- [3] N. Salari, H. Zarei, S. Rasoulpoor, H. Ghasemi, A. Hosseini-Far, and M. Mohammadi, "The impact of social networking addiction on the academic achievement of university students globally: A meta-analysis," *Public Health in Practice*, vol. 9, art. 100584, 2025.
- [4] M. Jamil, S. Naeem, and F. Kanwal, "Examining the impact of social media usage on high school students' study habits and academic performance," *Journal of Education and Educational Development*, 2020.
- [5] X. Wang et al., "Social media use and academic performance among college students: the chain mediating roles of social anxiety and fear of missing out and the moderating effect of teacher-student relationship," *Frontiers in Psychology*, 2025.
- [6] R. Al Mosharafa, T. Akther, and F. K. Siddique, "Impact of social media usage on academic performance of university students: mediating role of mental health under a cross-sectional study in Bangladesh," *Health Science Reports*, vol. 7, no. 1, 2024.
- [7] M. Shafiq and K. Parveen, "Social media usage: analyzing its effect on academic performance and engagement of higher education students," *International Journal of Educational Development*, vol. 98, 2023.
- [8] A. C. Karpinski, P. A. Kirschner, I. Ozer, J. A. Mellott, and P. Ochwo, "An exploration of social networking site use, multitasking, and academic performance among United States and European university students," *Computers in Human Behavior*, vol. 29, no. 3, pp. 1182–1192, 2013.
- [9] D. Liu, P. A. Kirschner, and A. C. Karpinski, "A meta-analysis of the relationship of academic performance and Social Network Site use among adolescents and young adults," *Computers in Human Behavior*, vol. 77, pp. 148–157, 2017.
- [10] S. Abdulsalim, M. S. Anaam, M. Farooqui, M. S. Alshammari, S. Alfadly, J. Alolayan, A. A. Aljarallah, and S. Alsahali, "Evaluation of social media addiction and its relationship with anxiety and academic performance among medical and non-medical students: a cross-sectional study from Saudi Arabia," *Healthcare*, vol. 13, no. 3, p. 295, 2025.
- [11] Y. Hou, C. Qin, and P. Xu, "Social media use and academic performance in Chinese children and adolescents: a moderated chain mediation model," *Behavioral Sciences*, vol. 14, no. 10, p. 867, 2024.
- [12] X. Zhang, J. Abbas, M. F. Shahzad, A. Shankar, S. Ercisli, and D. C. Dobhal, "Association between social media use and students' academic performance through family bonding and collective learning: the moderating role of mental well-being," *Education and Information Technologies*, vol. 29, pp. 14059–14089, 2024.
- [13] M. Abuzar and S. Hussain, "Integrating social media into educational strategies: examining the impact of social media usage on high school students' academic performance," *International Journal of Research in Education and Science*, vol. 10, no. 4, pp. 826–840, 2024.
- [14] Z. Iqbal and R. Safdar, "Role of media on academic performance of students," *Pakistan Journal of Social Research*, vol. 5, no. 2, pp. 889–895, 2023.
- [15] X. Ma, Q. Liu, and W. Zhang, "The impact of multidimensional excessive social media use on academic performance: the moderating role of mindfulness," *Frontiers in Psychology*, vol. 16, art. 1579509, 2025.
- [16] M. A. Jenkins-Guarnieri, S. L. Wright, and B. Johnson, "Development and validation of a social media use integration scale," *Psychology of Popular Media Culture*, vol. 2, no. 1, pp. 38–50, 2013.
- [17] R. Junco and S. R. Cotten, "No A 4 U: The relationship between multitasking and academic performance," *Computers & Education*, vol. 59, no. 2, pp. 505–514, 2012.
- [18] C.-T. Chang, C.-S. Tu, and J. Hajiyeve, "Integrating academic type of social media activity with perceived academic performance: A role of task-related and non-task-related compulsive Internet use," *Computers & Education*, vol. 139, pp. 157–172, 2019.
- [19] A. R. Masalimova, Y. P. Kosheleva, N. N. Kosarenko, S. G. Kashina, E. G. Sokolova, and E. V. Iakovleva, "Effects of social networking sites on university students' academic performance: A systematic review," *Online Journal of Communication and Media Technologies*, vol. 13, no. 3, art. e202339, 2023.
- [20] M. Kuş, "A meta-analysis of the impact of technology related factors on students' academic performance," *Frontiers in Psychology*, vol. 16, art. 1524645, 2025.
- [21] E. S. Troll, M. Friese, and D. D. Loschelder, "How students' self-control and smartphone-use explain their academic performance," *Computers in Human Behavior*, vol. 117, art. 106624, 2021.
- [22] T. Maree, "The Social Media Use Integration Scale: Toward reliability and validity," *International Journal of Human-Computer Interaction*, vol. 33, no. 12, pp. 963–972, 2017, doi: 10.1080/10447318.2017.1301041.