

Understanding Academic Performance: The Influence of Social Media, Classroom Engagement, and Personal Discipline

Anyi Li

*Smeal College of Business, Pennsylvania State University, Pennsylvania, USA
aql5912@psu.edu*

Abstract. In today's society, where academic performance is highly valued, the idea that grades are closely related to a student's future development puts immense pressure on students. Many students make poor decisions and become overwhelmed in the pursuit of good grades. Therefore, it is crucial to help students understand the factors that influence their academic performance. Addiction to social media often impacts students' academic performance. If students become overly obsessed in social media, their time and attention are diverted from studying. Furthermore, if students experience abuse caused by social media, they can develop serious psychological problems that lead to a loss of interest in learning. In addition to distraction and cyberbullying, social media also negatively impacts students' sleep. However, sleep is crucial for academic performance because good sleep deepens the knowledge and memory students acquire in their daily lives. Besides excessive use of social media, students' self-discipline is also a contributing factor to their academic performance. Students' lack of attendance in class can lead to them missing out on important information. However, in addition to attendance, students should also pay attention in class so they can focus on the knowledge presented. Furthermore, doing homework helps students consolidate what they have learned in class and put it into practice. Ultimately, if students consume alcohol inappropriately, the time they spend studying will be shortened, potentially negatively impacting their academic performance. Therefore, the way of students using social media and students' self-discipline in learning are major factors that influence their academic performance.

Keywords: Academic performance, Contribution factor, Social media, Self-discipline

1. Introduction

According to data released by the Pew Research Center in 2025, 68 percent of teenagers feel immense pressure due to their desire to succeed academically [1]. In today's world, students' academic performance and the factors that influence it have always been the focus of research in education. Many students and their parents believe that students' academic performance determines whether they will have a bright future, and this perspective is particularly common among families from conservative societies. This mindset invisibly places immense psychological pressure on many

students. This stress leads students to overemphasize grades in school, neglecting the fact that the learning process is the true determinant of knowledge acquisition.

However, this overemphasis on results can often lead students in the wrong direction, with many students resorting to AI to complete their assignments or simply copying others' work. Such unscrupulous pursuit of falsely high grades not only undermines the overall learning environment but also deceives the students themselves. Without a solid grasp of foundational knowledge, it is impossible for students to learn more advanced knowledge. Furthermore, when students enter the workplace, lacking a true grasp of what they learned in school, they struggle to complete tasks assigned by their supervisors. Besides hindering students from pursuing long-term success, excessive focus on grades can also cause psychological harm to many students due to tremendous pressure, and even potentially lead to suicide. Therefore, to prevent students from misguidedly pursuing high grades and to help them overcome the unbearable pressure of grades, it is crucial to identify the factors that contribute to academic performance. If students understand these factors, they can work to achieve good grades by addressing the root causes of their poor academic performance. While there is a wealth of academic research on student underperformance in education, many of these studies focus on macro-level factors, such as the depth of education provided in different regions, which determines students' academic performance. However, objective factors like these are beyond the students' control. Therefore, identifying real factors that students can adjust is important. In order to prevent students from making false decisions and experiencing great psychological pressure due to over-focusing on grades, identifying factors that students can address is critical, in which these root causes include students' social media use and their own self-discipline.

2. Over usage of social media

2.1. Distractions caused by social media

Many students struggle with their academic performance because they are addicted to social media. With the rapid development of the Internet, more and more social media platforms have emerged. Social media is a double-edged sword because while it helps many students learn knowledge that they have never been exposed to before, it also makes many students addicted, resulting in a decline in their academic performance. According to a study by Associate Professor Mellissa Gordon from the University of Delaware on the frequency of social media use and academic performance of teenagers aged 11-15, when students used social media such as Facebook, Snapchat, Instagram and X more, their grades also declined, which indicates that the frequency of students' social media use is negatively correlated with their academic performances [2]. If students pay too much attention to the content presented to them on social media, their attention will be distracted from their studies, and the time they spend studying will be reduced, resulting in a decline in their grades. Moreover, if students are diverted by social media during their learning process, they will not be able to effectively finish the tasks they are supposed to complete, such as homework or review for exams, thus affecting their learning efficiency in a negative way. In addition to the causal relationship between social media use distracting students from learning and causing poor academic performance, Mellissa Gordon also indicates in her research that family dysfunction can also lead to adolescents' addiction to social media, resulting in poor academic performance [2]. As students start their puberty, their communication with their parents decreases as they tire of control from their parents and seek independence. In such circumstances, using social media does not only help them relieve the stress caused by the tension in their relationships with their parents, but also allows them

to escape their parents' excessive interference in their lives. However, such behavior can also lead to students becoming overly dependent on social media, causing them to neglect their studies and thus suffer a decline in academic performance. On the other hand, when students excessively use social media out of a desire to escape real life, it further reduces the already limited communication with their parents, exacerbating tensions and ultimately forming a vicious cycle of excessive use of social media, which reduces academic performance.

2.2. Cyberbullying brought by social media

Besides the fact that social media can potentially distract students from their studies, leading to poor academic performance, the cyberbullying caused by students' use of social media can also prevent them from performing well academically. According to a study by the Centers for Disease Control and Prevention, 77 percent of American high school students use social media multiple times a day, and frequent use of social media is positively correlated with cyberbullying, indicating that the more frequently people use social media, the more likely they are to be cyberbullied [3]. The consequences of cyberbullying and its impact on academic performance cannot be ignored. According to an article published in Heliyon and included in PubMed Central, Cyberbullying can cause serious psychological harm to victims [4]. Victims often experience negative emotions such as depression and self-denial. These pessimistic sentiments can cause immense mental stress, making it difficult for victims to concentrate in class and lose motivation to learn. This prolonged psychological torment can make victims less willing to attend school and cause them to fall behind in their studies, leading to unfavorable academic performance.

2.3. Negative impact of social media on sleep

Along with distraction from learning and mental stress caused by cyberbullying, social media also has a negative impact on students' sleep, preventing them from focusing on their studies and resulting in poor academic performance. An article published in Springer reveals the impact of social media use on sleep, and it states that major factors such as adolescents' addiction to social media and fear of missing out increase their tendency to use electronic devices before bedtime, and this behavior negatively impacts their sleep quality [5]. When students are involved in social media events, excessive focus and intense emotional fluctuations can keep their brains highly aroused, making it difficult to fall asleep. Furthermore, the article repeatedly emphasizes the term FOMO, an acronym for fear of missing out, which not only contributes to students' addiction to social media but also creates psychological tension, which can affect their sleep quality. In addition, the blue light emitted by electronic devices blocks the production of melatonin, a hormone that helps people sleep, leading to symptoms such as insomnia. Aside from the effects of psychological excitement and blue light negatively affecting melatonin, the behavior of spending time on social media itself also takes up the sleep time of individuals, thus shortening their overall sleep length. The article noted that this situation is pronounced among teenagers, and it also reports data indicating that at least 80 percent of adolescents use electronic devices before bed [5]. These negative effects of using social media before bed can cause students to have difficulty sleeping at night, insomnia, and daytime sleepiness. However, insufficient sleep at night can also negatively affect students' academic performance. A study from Carnegie Mellon University pointed out that students sleep an average of about 6.5 hours a night, but when this number falls below 6, students' academic performance begins to decline [6]. Researchers have found from previous animal studies that good sleep is essential for learning because daytime memories and acquired knowledge are deepened during nighttime sleep. Based on

this insight, the researchers began their research on more than 600 students. The results of this research demonstrate that when students' total sleep falls below 6 hours, their GPA will drop by 0.07 for every hour less, and this negative impact on students' grades cannot be eliminated. Therefore, good sleep quality is the foundation of good academic performance. If students cannot get a stable sleep at night, their grades will be affected unfavorably. Therefore, social media is a major factor that negatively affects students' academic performance because it distracts students from their studies, causes cyberbullying, which brings students intense psychological stress, and negatively affects their sleep, which is crucial to their academic performance.

3. Lack of self- discipline

3.1. Class attendance

In addition to social media, students' self-discipline is also an important factor affecting their grades. For students, class attendance is important because it helps them develop good study habits, such as mastering material straight away rather than putting it off until right before an exam. Furthermore, when students encounter material that they do not understand in class, they can ask their instructor questions promptly, increasing their learning efficiency. Instructors also potentially provide valuable information, such as summaries of key learning content and suggestions for preparing for exams. In many classes, attendance and in-person class assignments are also part of students' grades. However, despite the obvious benefits of attendance, many students still choose not to attend class. A professor at Colorado State University conducted student research in the class and found that 37 percent of students missed class for various reasons, such as early class period or fatigue from work [7]. However, absence can have a negative impact on students' grades. A journal article published in the Sage Journal indicates that textbooks and online learning materials do not always contain complete information that students need to do well in the class, and students can avoid knowledge gaps by attending lectures [8]. Furthermore, lectures also provide other materials, such as class notes, to help students learn and improve their learning efficiency. On the other hand, if students choose not to attend classes, they will miss out on important information, which can negatively affect their overall academic performance. Furthermore, the North Carolina Community College System's open educational resources library also emphasizes that attending classes allows students to participate in important class activities, such as discussions with classmates [9]. Individuals can potentially receive the answer to the knowledge they do not understand from their classmates through class discussion. In addition, when students have the same questions as their classmates, they can get the answers from their classmates who ask questions to the instructor.

3.2. Focus in class

While class attendance is an important factor in a student's academic performance, simply attending classes is not enough for good grades, and paying attention in class is also essential. Rutgers University-New Brunswick conducted a classroom experiment and found that students who used electronic devices for non-academic purposes during class did not perform as well on their final exams [10]. When students were distracted from lectures and focused on electronic devices, their attention was diverted from learning, leading them to miss out on the knowledge the instructor delivered. Furthermore, the study showed that even when students who did not use electronic devices participated in electronic device-allowed classes, their learning efficiency was still reduced. This result demonstrates that screen use can still negatively impact the overall learning atmosphere

in a class. The Rutgers study also demonstrated the potential long-term harm that using screens, rather than paying attention in class, can have on students' academic performance [10]. A professor and a graduate student conducted an experiment with 118 students in a cognitive psychology course: Over the semester, electronic devices were allowed in half of the classes and not allowed in the other half. In the classes with electronic devices, students' scores were not significantly affected when they took a post-lecture quiz on the content. However, in the final exam, the students' test scores dropped by more than 5%. The results of this experiment show that whether using electronic devices has no significant impact on students' short-term performance in class, but in the long-term understanding and memory of knowledge, students' academic performance is still negatively affected.

3.3. Doing homework

Along with class attendance and paying attention, students' self-discipline is also demonstrated by completing their homework. Proper homework completion helps students review what they learned in class and develop independent problem-solving skills, thereby improving their understanding of the knowledge. An academic paper published by East Carolina University describes an experiment conducted with students in the Department of Economics [11]. Students flipped a coin to determine whether they were required to do homework. This method of determining the treatment and control groups ensures fairer experimental results by reducing the influence of students' backgrounds and potential unobserved differences, thereby improving comparability between the two groups. The treatment group consisted of students who were required to complete assigned homework, while the control group consisted of students who were not required to do homework. The results illustrate that on the first exam, the average score of students in the treatment group was 2 points higher than that of students in the control group. Across all four exams, the average score of students in the treatment group remained 2 points higher than that of students in the control group. Regardless of the group, the average score of students who completed the homework was 4-6 points higher than that of those who did not. In the final exam results, 54% of the students in the treatment group received an A/B letter grade, which was 9% higher than the 45% of the control group. Meanwhile, the failure rate of the treatment group was 5%, which was 10% lower than the 15% of the control group. The results of this experiment revealed an important finding: students who completed their homework had better academic performance, and whether they did their homework was more important and had a more significant impact than whether they were required to do the homework.

3.4. Literature review on alcohol consumption

Not only homework completion, but students' alcohol consumption can also contribute to the impact of students' self-discipline on academic performance. A journal article published in *Journal of American College Health* delivers an experiment conducted on 736 college students [12]. The study lasted for seven semesters, and the researcher performed daily assessments on participants 14 times. In addition, the experiment divided drinking into four levels: non-drinking, moderate drinking, heavy episodic drinking only, and high-intensity drinking. The results of this experiment showed that drinking has a negative impact on academic performance. Students who engaged in heavy episodic drinking and high-intensity drinking were less likely to attend classes the next day. If students did not drink, they would spend more time studying. On the contrary, if students engaged in heavy episodic drinking or high-intensity drinking, they would devote less time to studying.

3.5. Data analysis on student alcohol consumption by using R

To further validate the finding outlined above in the literature review that students' alcohol consumption negatively impacts their academic performance, this study used R to analyze alcohol consumption data from high school students enrolled in Portuguese and mathematics courses, publicly available on the UCI Machine Learning Repository and Kaggle [13]. This data set is categorized by frequency of drinking on a scale from 1 to 5, with 1 representing the least drinking and 5 representing the most. This article used R to generate statistical charts, scatter plots, and regression models to analyze the drinking patterns of Portuguese and mathematics students on weekends and weekdays, as well as the drinking patterns of both genders, and the impact of drinking on academic performance. On weekends, drinking levels were generally low among Portuguese and mathematics students, with the majority of students in Level 1 and the number of students decreasing from Level 1 to Level 5. Weekday drinking levels were even lower for Portuguese and mathematics students. Similar to the decreasing pattern on weekends, weekday drinking levels dropped sharply from Level 1, the highest number of students, to Level 2, and then continued to decrease to Level 5, demonstrating that weekday drinking is even less common. Even though the number of students in the Portuguese class was higher than that in the math class at each drinking level, the sample size of the Portuguese class was larger overall, and a direct comparison of the number of drinkers between both Portuguese and math classes was unreliable. Therefore, when comparing the alcohol consumption of students from both classes on the weekend and weekday scales, the alcohol consumption of students in the two classes showed the same trend: the higher the drinking level, the fewer students. In addition to the overall downward trend in drinking data for Portuguese and math classes on weekends and weekdays, there are also differences in the drinking scale between men and women on weekends and weekdays. On weekends, men are more widely distributed on the drinking scale of 1-5, while women are more concentrated in the drinking scale of 1-3. This situation explains that there are both high-frequency and low-frequency drinkers among men, whereas there are only a few high-frequency drinkers among women, and the rest are concentrated in the drinking scale of 1-2. On weekdays, the majority of women's drinking levels are concentrated in the drinking level of 1, while the majority of men's drinking levels are distributed in the drinking level of 1-2. Even though men's drinking levels on weekdays are still higher than women's, they are still far lower than their drinking levels on weekends.

This study also uses R to create a scatter plot, mainly comparing the relationship between weekend drinking and final grades. The scatter plot shows a negative correlation between the two and a downward trend with the regression line, indicating that as the drinking level increases, the average academic performance of students declines. Although the mean scores of students with a drinking level of 1 were distributed over a wide range, from high scores to zero scores, students with low drinking frequency received fewer low scores than those with high drinking frequency because the proportion of low scores and zero scores accounted for the majority among students who registered a drinking frequency of 4 or 5. This article uses an R-based regression model to further demonstrate the findings that as drinking frequency increases, students' overall grades decrease. The interception of this regression model is 12.14, indicating that without drinking, students' overall grades would be around 12 points. The regression coefficient of this model is -0.35, indicating that for every 1 level increase in drinking frequency, students' grades decrease by 0.35 points. This also demonstrates that there is a negative correlation between drinking levels and students' academic performance. In the regression model, the p-value for weekend drinking is 0.000178, which is less than 0.05, proving that the regression model's insight into the impact of drinking on student grades is significant and can be proven to be negatively correlated with academic performance. Therefore,

students' academic performance is not only affected by social media, but also by students' self-discipline, including class attendance, paying attention in class, homework completion, and proper alcohol consumption.

4. Conclusion

With the increasing emphasis on academic performance, achieving good grades has become a burden on students, placing immense pressure on them. It is as if their future will be gloomy if they do not achieve good grades. This pressure has also led some students down a misguided path in their pursuit of high grades. Many students use unethical methods to achieve better results. This behavior not only undermines educational equity but also creates a false sense of security for students. When these students truly enter society and the workplace, they discover that the dishonest practices they employed as students will eventually come back to haunt them. Furthermore, the emphasis on grades can create psychological pressure and suffocation. Therefore, to help students escape the potential unethical practices and heavy pressures from over-focusing on good grades, it is crucial to identify the true factors contributing to academic performance. While many education experts offer macro-level perspectives on student performance, these macro-level factors are not something that students can change. Therefore, identifying the factors that truly impact student academic performance and that students can mitigate is important. The first factor that prevents students from achieving good academic results is excessive use of social media. Improper use of social media distracts students from their studies and prevents them from focusing on schoolwork. Additionally, the cyberbullying associated with social media can lead to depression and aversion to learning. Furthermore, the blue light emitted by devices that host social media disrupts melatonin, a hormone needed for sleep, and excessive social media use shortens students' sleep duration. In addition to social media, student self-discipline is a significant factor directly impacting academic performance. Class attendance ensures students do not miss out on important learning information delivered by the instructor. Paying close attention allows students to participate in class activities that promote learning. Completing homework allows students to consolidate knowledge learned in class and cultivate problem-solving skills. Appropriate drinking habits can also prevent the learning difficulties associated with intoxication. Therefore, if students can understand these factors that influence academic performance and promptly address the issues in their behavior that prevent them from achieving good grades, their academic performance will improve, and the overall learning environment will be enhanced.

References

- [1] Parker, K. (2025) Pressures teens are facing. Pew Research Center. Available at: <https://www.pewresearch.org/social-trends/2025/03/13/pressures-teens-are-facing/>
- [2] Gordon, M.S. and Ohannessian, C.M. (2023) Social media use and early adolescents' academic achievement: Variations by parent-adolescent communication and gender. *Youth & Society*, 56(4), 651-672.
- [3] Centers for Disease Control and Prevention. (2024) Frequent social media use and experiences with bullying victimization, persistent feelings of sadness or hopelessness, and suicide risk among high school students—Youth risk behavior survey, United States, 2023. Centers for Disease Control and Prevention. Available at: <https://www.cdc.gov/mmwr/volumes/73/su/su7304a3.htm>
- [4] Peled, Y. (2019) Cyberbullying and its influence on academic, social, and emotional development of undergraduate students. *Heliyon*. Available at: <https://pmc.ncbi.nlm.nih.gov/articles/PMC6434491/>
- [5] Yu, D.J., Wing, Y.K., Li, T.M.H. and Chan, N.Y. (2024) The impact of social media use on sleep and mental health in youth: A scoping review. *Current Psychiatry Reports*. Available at: <https://link.springer.com/article/10.1007/s11920-024-01481-9>

- [6] Kish, S. (2023) Nightly sleep is key to student success. Carnegie Mellon University News. Available at: <https://www.cmu.edu/news/stories/archives/2023/february/nightly-sleep-is-key-to-student-success>
- [7] Laybourn, P. (2023) Students skipping class. College of Natural Sciences, Colorado State University. Available at: <https://www.natsci.colostate.edu/master-teacher-initiative/teaching-tips-and-guides/students-skipping-class/>
- [8] Credé, M., Roch, S. and Kieszczynka, U. (2010) Class attendance in college: A meta-analytic review of the relationship of class attendance with grades and student characteristics. *Review of Educational Research*, 80(2), 272-295.
- [9] Learning Framework. (n.d.) Effective strategies for college success, Chapter 10: Active listening in the classroom. OpenNCCC. Available at: <https://opennccc.nccommunitycolleges.edu/courseware/lesson/186/student/?section=1>
- [10] Buccino, N. (2018) Cellphone distraction in the classroom can lead to lower grades: Rutgers study finds. Rutgers University News. Available at: <https://www.rutgers.edu/news/cellphone-distraction-classroom-can-lead-lower-grades-rutgers-study-finds>
- [11] Grodner, A. and Rupp, N. (n.d.) The role of homework on student learning outcomes: Evidence from a field experiment. East Carolina University. Available at: <https://economics.ecu.edu/wp-content/pv-uploads/sites/165/2019/07/ecu1001.pdf>
- [12] Allen, H.K., Calhoun, B.H. and Maggs, J.L. (2020) High-risk alcohol use behavior and daily academic effort among college students. *Journal of American College Health*, 70(2), 335-339.
- [13] UCI Machine Learning Repository. (n.d.) Student alcohol consumption [Data set]. Kaggle. Available at: <https://www.kaggle.com/datasets/uciml/student-alcohol-consumption>