

**Social Media's Impact on  
Student Educational Motivation**

EDF6481 Foundations of Educational Research  
Final Research Proposal

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## **Introduction**

The academic realm has always questioned how to improve student motivation in the school setting. One new variable that has emerged and become widely used in the last decade is social media. The new connection between motivation and the influence of social media in the classroom is something to be studied. This is why we are analyzing research in this specific area of academics; our research question: How does social media use impact student academic motivation and achievement?

There are, however, a few gaps identified through our research of the literature on this topic. One gap being most reports are self-reports or surveys. Information reported by study participants leaves room for error in data. Another gap we found in the literature was that there were many different variables that impacted students' academic motivation and achievement. This is something that is needed to keep in mind to eliminate or account for as many variables as possible during the methods section of our research. Lastly, another gap we found in the literature was that studies mostly covered college aged students. There were limited studies done on high/middle school aged students.

The target population of our study is high school aged students. As previously mentioned, there were limited studies done on younger grades (middle/elementary aged students) likely due to barriers in access to social media platforms and devices used to access these platforms. Previous studies on this topic frequently reported data on students in post-secondary educational settings therefore, research on the impact of social media on students in high school is needed. Social media has a large impact on our society today, and in turn, our educational systems. This will be talked about in more detail later on. We include the practice in our research to learn/show

exactly what is being done to manipulate our dependent variable (student motivation and achievement), as well as how our variable of social media changes things.

In the age of digital interaction, social media emerges as the digital place where individuals connect, share, and engage with content. Social network sites, a division of social media platforms, serve as virtual communities where users build profiles, communicate, and form relationships based on shared interests. Among the social platforms, Facebook reigns as one of the most popular social media sites. Academic performance refers to the measurable outcomes of learning activities, while academic achievement is the broader spectrum of educational accomplishments and milestones. Adolescents, navigating the hardships of youth, stand at the crossroads into adulthood, facing unique challenges and opportunities. Addiction is a pressing concern in the digital age (especially with adolescence), it comes when individuals develop compulsive behaviors towards certain activities, including excessive social media use. School is the cornerstone of formal education and it serves as an environment where academic pursuits are combined with personal growth. In this web of social dynamics and educational endeavors, adolescents juggle with the appeal of social media, its potential impact on academic achievement, and the balancing act of navigating both virtual and real-world landscapes within the framework of schooling.

### **Literature Review**

There are many factors that have an impact on student motivation and consequently student academic achievement. One factor that has been of interest more recently is the impact of

social media use on student motivation and academic achievement. While this particular question has garnered a relatively large body of research, the information gathered from these studies has been primarily ambiguous, leading to no definitive or causal relationships between social media and its direct impact on students. In reviewing the literature, we can see how a variety of studies aimed at looking at the impact of social media on student motivation and academic performance have been conducted, what they have found, and how we can use this research to further and, hopefully, more conclusively answer some of these critical questions.

Much of the research on the impact of social media has reported mixed findings. Kaya and Biçen (2016) found in a case study of student behaviors related to their Facebook use that social media usage increased student participation in school activities benefiting their school engagement, but also found that social media use served as a distraction, impeding student focus. While Kaya and Biçen (2016) found both positive and negative impacts of social media, Tafesse (2022) found that the effect of social media usage on academic performance followed an inverted “u” shape rather than a linear positive or negative correlation. Tafesse hypothesized that up to a certain amount of social media use is increasingly beneficial until the benefits peak and, as social media use increases after that specific amount of time, social media use benefits then decrease. In this study, it was found that spending less than 88.87 minutes on social media platforms was positively correlated with academic achievement, while spending more than 88.87 minutes on social media was negatively correlated with academic achievement. Much of the research on the impact of social media is based on quantitative data collected through surveys based on participant self-report. Tafesse (2022) set out to draw data from sources beyond self-report by having participants download an app to monitor their social media site usage. In addition to the data collected through the app, students' academic achievement was collected through

institutional reported GPA scores, both semester and cumulative. While Taffesse (2022) was able to prove the inverted “u” relationship, his study was based on a convenience sampling of participants from the business and economics department of the university and the sample size was small, consisting of only 40 participants. Some extraneous variables such as weekend use and social media use during exam weeks were accounted for, but without a more representative and larger sample population, it's hard to say if the 88.87 minute is an accurate threshold between the impact of social media being negative versus positive.

In addition to Tafesse (2022), Barton et al. (2018), Susilawati et al. (2020), and Luo et al. (2020) all studied the impact of social media on student performance and all their studies came back with mixed results. Barton et al. (2018) found that when examining the relationships between social media usage, attention, motivation, and student academic performance, overall it was found that less social media usage was associated with higher grade point average, regardless of student report of attention, but higher grade point average was also positively correlated with high motivation, regardless of social media usage. Ultimately, the findings of this study were that students should focus on self-motivated skills to improve academic performance over concerns about social media usage. This study was based on a sample of 659 students all from a southeastern university in the United States. This was a convenience sampling, heavily represented by females, with a participant average age of 24. This study was limited because it used a nonexperimental design, examining the relationships between participants' self-reports of attention, motivation, social media usage, and GPA through surveys. An additional limitation of the study was that there was no distinction in the survey between academic and nonacademic social media use, therefore impacting the accuracy of the social media usage data reported by participants.

Susilawati et al. (2020), conducted qualitative research using case studies, questionnaires, unstructured interviews, and observations to examine individually reported positive and negative impacts of social media on the education of elementary aged students in the East Lombok District in Indonesia. The findings reported that the positive impacts of social media include: easier to make friends, gain information, express oneself, and build self-confidence, and the negative impacts of social media include: time consuming, promotes laziness, perpetuates bullying, perpetuates slang language, and causes discrimination. While the findings of this study are helpful in expressing individual feedback of community and personal experience, offering important ideas for further investigation, this study was limited by an unreported sample size. In addition to Barton et al. (2018) and Susilawati et al. (2020), Luo et al. (2020) also found the education and motivational implications of the use of social media to be mixed. In a study involving 560 students from 4 secondary schools in Hong Kong, surveys of the participants revealed that Outside School Social Media use positively impacted students by increasing In School Social Media Use which was found to have a positive impact on student academic performance but also increased impulsivity which has been found to have a negative impact on school performance. This study is limited due to self-reported data and also, while some mediating variables were targeted and accounted for, it is likely other mediating variables impacted the results of the study. Despite using various research methods, Tafesse (2022), Barton et al. (2018), Susilawati et al. (2020), and Luo et al. (2020) all found both positive and negative impacts of social media on student motivation and performance.

Unlike the previously mentioned studies, Malik et al. (2020) and Wang and Gu (2019) found that the use of social media or social networking sites had a positive impact on student motivation and performance. Research by Malik et al. (2020) was based on a convenience

sampling of volunteer undergraduate students from a university Hefai City in the People's Republic of China. It was found through 334 surveys, which covered 25 items primarily using Likert scales, that social media use had a positive impact on student motivation, student academic performance, and student creativity. While this study is evidence of a positive correlation between social media and student motivation, it was limited by the sampling size and method, as well as the potential for errors in self-reporting. Wang and Gu (2019) found a positive correlation between online social capital and academic identity, which includes academic motivation. Online social capital was positively correlated with peer relationships and peer relationships were positively correlated with academic identity. Wang and Gu (2019) surveyed 1,286 Chinese college students from different regions and different college levels. The surveys retrospectively evaluated participants' experiences with peer relationships, online social capital, and academic identity. To ensure the surveys were valid, researchers conducted a pilot test on 78 participants who were then excluded from the final research. The pilot test allowed researchers to alter wording and eliminate an ambiguity in the survey. While this study uses a large sampling of participants, the sample population only included college students and does not fully represent the adolescent population. It was also limited by potential errors in retrospective analysis. Both studies by Malik et al. (2020) and Wang and Gu (2019) found significant positive correlations between student social media use and positive impact on student motivation.

Unlike Malik et al. (2020) and Wang and Gu (2019), a meta-analysis by Liu et al. (2017) found a negative relationship between social networking site (SNS) use and student academic performance. This analysis examined 30 previous studies, excluding qualitative research, theoretical studies, and reviews, and recorded correlation coefficients of the relationship between SNS usage and academic performance. The correlation coefficients were converted to z scores to

compare how far each study's data differs from the mean. This research ultimately included 101,847 participants from 23 colleges and 5 middle or high schools. While this is a meta-analysis of previously done research, the findings are based on a moderate sampling of research and a large number of participants. A study by Bhandarkar et al. (2021) also found that lower academic performance was associated with higher duration of social media use. Bhandarkar et al. (2021) surveyed 400 volunteer undergraduate medical students in their 2-4th years on their academic performance and duration of social media usage. Using the Pearson correlation coefficient the researchers found a negative correlation between social media use and academic performance. This study further supports the conclusions from the meta-analysis by Lui et al. (2017) that social media use has a negative impact on student performance and motivation.

While there is a growing body of research on how social media use is impacting students, there are many challenges preventing strong conclusive research on the impact. Malik et al. (2020), Luo et al. (2020), Barton et al. (2018), Bhandarkar et al. (2021), and Wang and Gu (2019) all used surveys to collect data on social media use and student academic performance and motivation. Self-reported data is a common collection tool for this topic and also a common limitation. While surveys and questionnaires are easily replicated and offer correlational data between social media and academic motivation and performance, the extent of extraneous variables prevents conclusive data and consequently prevents us from using the data to guide students. With many extraneous variables that can impact student academic performance and student motivation in addition to the impact of social media, we need a deeper investigation of daily social media use and how that impacts the daily academic habits of students and their motivation to succeed.



## Method

We have highlighted, just as our research predecessors have, that a limitation to quantitatively measuring student motivation is the heavy reliance on student self-reporting. To escape from this self-reporting trap, and add more validity to student motivation measures, we have decided to couple self-reported measures with a relatively new but proven approach to measuring physiological responses that correlate to periods of high cognitive engagement and indicate a motivated state. By utilizing a mixed method research approach as opposed to primarily relying on the self-reported data used in previous studies, reliability of the study will be enhanced.

Electrodermal Activity (EDA) are small physiological changes that occur at the subconscious level and can be measured by devices worn by test subjects. Tan et al (2021) highlight the correlation between Electrodermal Activity (EDA) and heart rate with levels of arousal and motivation. In fact, these changes have been studied since the 1880s and are strongly correlated with levels of attention in learning environments. Di Lascio et al, 2018, believe it is possible to use discrete EDA measuring devices to measure learner engagement. One issue with some EDA measuring devices is that they are historically quite large and may impede a wearer's free range of motion. Thanks to technological advances, many modern EDA measuring devices can be worn much like a watch. These more discrete devices have been shown to provide accurate readings while maintaining wearer comfort and range of motion. We believe these small wearables can reliably measure engagement activity levels using EDA measures that match self-reports of high motivation. This can, in turn, add more credence to our measure of self-reported student motivation.

To measure social media usage, we propose self-reported quantitative data and data produced via a phone app that logs social media app usage. This method reduces the possibility of not obtaining accurate reports of social media usage among study participants. By comparing students with high social media usage and low social media usage with each group's self-reported and EDA measured levels of engagement and motivation we can get a clear and robust view of the relationship between social media usage impact and learning motivation and attainment.

To provide insights into how social media affects students over time we will incorporate a longitudinal study that tracks how student's motivation is impacted by social media usage both in and outside the classroom throughout their high school years. This will utilize student self-evaluations, educator observations with the teachers and administrators reporting using the Achievement Goal Orientation Scale which includes three elements of observation: mastery goals, performance-approach goals and performance avoidance goals. Additionally, the students will contribute self-reported data over time using the Self-Regulation Scale (SRS). These qualitative research findings can provide additional context to shape understanding of the quantitative data produced.

## **Participants**

Participants in this study will consist of a stratified random sampling of 800 high school students from the two high schools in Sometown, USA. The subgroups will be proportionally divided between grade level, and male and females in the population at each level.

**Procedure**

Potential participants will be identified. Researchers will provide administration with materials explaining the study and the participation consent forms for parents. Once approval has been obtained, participants will meet with researchers in small groups on three occasions throughout the year. Only students who returned parental consent will be permitted to participate.

The first meeting will consist of informing student participants of what is entailed in the study and the expectations of participation, administration of the first student self evaluation (SRS) and setting up the phone application that tracks social media usage as well as distribution of the EDA device assigned to each participant.

The second meeting will occur midway through the school year. The self reported SRS will be administered to the student participants. It will be during this same period of time when the teachers will be given the observation forms using the Achievement Goal Orientation Scale to detail the three elements of observation: mastery goals, performance -approach goals, and performance-avoidance goals for each of their student participants in the study.

The third and final meeting of the school year will be used to administer the year-end self-evaluation and the Self-Regulation Scale (SRS) and also collection of the student's EDA device.

Results from the EDA devices and the usage apps will be collected remotely monthly, on the last weekday of each month.

## Instruments

- Student self-evaluation questionnaire for students to be completed twice a year (beginning and end of year). Results will contribute to longitudinal study findings and analysis.
- Student self-reported Self-Regulation Scale (SRS) to be completed twice a year (mid-year and end of year). Results will contribute to longitudinal study findings and analysis.
- Achievement Goal Orientation Scale for teachers and administrators to complete for each student participant under their care mid-way through the year. Results will be used to clarify and support findings of the quantitative data gleaned from the EDA devices and students' usage apps.
- Electrodermal Activity (EDA) devices will be administered to each participant in the study. These devices will provide accurate measurements of student engagement levels.
- Student phone app will be used to measure social media app usage.

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## **Appendix**

*Possible self-reported quantitative measurement model (AMS) -*

<https://www.rand.org/education-and-labor/projects/assessments/tool/1989/academic-motivation-scale-high-school-ams.html>

[Link to Motivation Survey](#)