

**Designing a School Related Application that Positively
Affects High School Students' Performance in School**

(Technical Paper)

**Investigating School Related Software
Applications' Effects on Academic Magnet
High School Students' Performance**

(STS Paper)

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On my honor as a University Student, I have neither given nor received unauthorized aid on this assignment as defined by the Honor Guidelines for Thesis-Related Assignments

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Introduction

What aspects of social media positively and negatively affect middle and high school students' success in school? Throughout the world students struggle with school. Approximately 1 out of 4 high school seniors in America will not graduate high school (11 Facts About High School Dropout Rates, n.d.). A kid's ability to succeed at school is extremely important in preparing them for the rest of their life. Today's students face psychological factors unknown to previous generations. Currently 90% of teens ages 13-17 participate in at least 1 form of social media (Kamenetz, 2019 & 2018). It is important that middle and high school students have positive influences around them from the people they interact with to the applications on their phone. Therefore in my research I will be investigating how social media affects adolescent students. Additionally, I will determine a list of social media features that have positive effects in order to complete my technical project's design. As a computer science student and aspiring entrepreneur, I'm interested in designing and creating software applications that do good in the world.

Technical Discussion

How can a multi-faceted application that combines many beneficial features that encourage students' success in school be created? In order for students to experience the benefits that the results of my research problem uncovers, there must be an application they can use. Ultimately this application will be designed with the hope that it can have any sort of positive effect on an adolescent. These effects could potentially be as small as encouraging someone to do a homework assignment that they normally would have skipped or as large as somehow leading to someone graduating high school instead of dropping out. It is difficult to

pinpoint exactly what factors cause what students to succeed and others to fail in school therefore this application could have a large range of effects, but ideally they're all positive.

Teachers and schools should be the largest channel that grows this application's popularity. Some teachers have already seen the benefit of engaging students through their personal technology. Some examples are when teachers and the school provide iPads for students or choose to play Kahoot, a game-based learning platform where students login through their computer or smartphone, in class. A school oriented software technology will only become widespread if teachers, students, and the school all benefit.

In order to design this mobile application, I will primarily rely on the things I have learned through my courses at UVA. Advanced software development taught me design thinking and the agile development process which will both be important for this application. Design thinking will allow me to turn the concepts I learn about through my STS research into tangible components of a mobile application. The agile development process will help the time frame of this project by giving a framework by which to break down the entire project into actionable chunks that can be done in a timely manner (Dingsøyr, Nerur, Balijepally, & Moe, 2012). In addition, I will use other techniques I learned from advanced software development including user interface mockups to envision what the application and its features will look like and wireframes to begin to understand how the coding behind the application may be done.

STS Discussion

What aspects of social media positively or negatively affect middle and high schoolers' success in school? In 2020, Netflix released a documentary featuring Silicon Valley insiders called *The Social Dilemma* that exposed many of the negative consequences of different social media platforms. Many applications that we choose to use in day to day life are terrible for our

attention span, mental health, and mood (Rhodes, 2020). Therefore we must learn about all applications, and in this case school related applications, in order to inform the companies designing these products and the consumers using them of the harm that is being done.

The stakeholders most directly involved in this research are students that are active social media users and companies that design and create school related social media applications. Since increasing a population's level of education often aids in a population's economic development, everyone in the society involving the main stakeholders are indirect stakeholders (Kruss, McGrath, Petersen, & Gastrow, 2015).

The primary STS theory of this research is technosocial. Our society is now intertwined with our technological developments. This includes economic, social, and political aspects. Different technologies, including the type this research focuses on, build from these existing societal structures (Woodhouse, 2013). At the same time, society is so entangled with technology that it can be one of the most powerful forces altering our society. Some people believe that technology is causing irreversible damage to some key elements of our society, however I believe that if we are able to research and acknowledge technology's detriments then we will be able to harness and utilize all of the good that it can do.

The significance of this problem is the same as the significance of my technical topic. Gaining a better understanding of the effect that social media is having on students can lead to increases in students' performance in school. Higher educational performance and higher graduation rates would be a tremendous benefit to all. A glaring issue in today's society is the extreme wealth and education gap. These two factors, wealth and education, have positive feedback loops on each other (Pfeffer, 2018). Therefore increasing attainment of higher levels of education could help reduce wealth inequality.

Research Question and Methods

In order to determine what aspects of social media positively and negatively affect middle and high school students' success in school, I will first be examining existing school-focused mobile applications. For each application, I will determine the key features. Then I will conduct a review of literature to investigate if the features found in the applications are known to affect students in some capacity. Many features have been researched such as learning performance following the use of an application enabling peer to peer collaboration (Al-Rahmi, Alias, Othman, Marin, & Tur, 2018). If a specific feature has not been researched then I will attempt to categorize it into a type of feature that may have otherwise been researched. These methods will provide a comprehensive overview of some of the relationships between social media and school.

Conclusion

Every year technology advances and becomes more prevalent. Its capabilities are amazing, however with each step forward it is important to take a look at everything that resulted. I hope to take a look at social media and deliver an application design that incorporates the most positive features of social media applications in terms of the features' effect on students' performance in school. My STS research will provide a list of application components which will then be used to design the app. This project is about using the most current research to determine how applications that people may use daily are affecting us. It is also about building a more positive society through the creation of a social media application with evidence based features.

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