Smartphone Addiction and the Application to fix it

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Introduction

For this research paper, the problem being addressed is that people use their phones too much and get wrapped up in them, and miss important moments in their lives because they are almost glued to their devices. It is hard to get away from smartphones because they are everywhere, anywhere you look you would not find an individual without a smartphone in their hand or pocket. We can all agree that smartphones should be used to some sort of extent, not our whole livelihood be in them. There are a bunch of people who would deny this but that is only because they are not aware of what is actually happening. Smartphone addiction, the little amount of time people spend on their devices turns out to be way more than they expected. The length of time an individual spends looking at their mobile screen is significant since it detracts from critical times. The person will be unable to return to their life while aimlessly scrolling. As a result, my crew and I devised the concept of developing anti-smartphone addiction software to help with this problem. An application that will aid in the battle against smartphone addiction. What the anti-smartphone addiction application would do ideally is display notifications of when the time is up to stop using the phone, and send alerts of when the phone is being used for too long of a period of time, within the application it would show tips/solutions for how to get over not wanting to be away from the device, display suggestions within the application for reducing the amount of time that is being spent on the phone, it would have the ability to exit out of any of the applications placed in the watch folders because of the application being active or in use for too long of periods of time. The main objective of the anti-smartphone application software would be to help people avoid becoming dependent on their devices.

Review of Literature

According to an article titled, "Social Interaction of Students Based on Smartphone Addiction Level in Public High School 21 of Makassar", it states that "Smartphone is currently a tool for communication that is widely used by all people, especially among high school students. Excessive use of smartphones can lead to smartphone addiction. Someone who has a smartphone addiction has anti-social behavior towards his environment. This study aimed to describe of social interaction on the male and female students who have a smartphone addiction in SMA Negeri 21 Makassar." (Seftiani) What they chose to do in this study was take 95 random high school students and decided to use quantitative with descriptive survey questions to determine whether or not they were suffering from smartphone addiction with them knowing about it. This is a great study to look at because when you think about it who uses their phones the most, the first thought that comes to mind is high school students. What they found out from their results was that "Based on the results of a study of 95 respondents, shows that respondents who experienced low-level smartphone addiction 19 people (28.8%) had a high social interaction, similar with respondents who experienced medium-level of smartphone addiction 43 people (65.2%) and high-level 4 people (6.1%) had a high social interaction." (Seftiani) What this is telling us is that no matter how much people use their cellular devices that the level at which someone can interact with people differs very minimally but does still have an effect on how people interact with others. People that would tend to fit into the category of low-level smartphone addiction seem to have higher social interaction because their faces were not buried in their phones, while people with high levels of smartphone addiction have high social interaction but not as well as people with lower levels.

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From the article "How parental smartphone addiction affects adolescent smartphone addiction: The effect of the parent-child relationship and parental bonding", it states that "Adolescent smartphone addiction (ASA) has fueled concerns worldwide regarding the negative health effects. This study aimed to examine whether parental smartphone addiction (PSA) affected ASA, and evaluated the mediating role of the parent-child relationship and the moderating role of parental bonding in the effect from PSA to ASA, among a Chinese sample of parent-child pairs." (Gong) in this study it is raising the concern about parental smartphone addiction (PSA) and how it affects their children. Smartphone addiction comes in many forms and as we can tell from this study it can also affect the children as well. As the common saying goes monkey see monkey do, and this is exactly what is happening. These parents who are addicted to their smartphones and devices are giving their kids devices to sit in front of all day and night and it is turning into a concern because now there is an adolescent who cries and throws a temper tantrum whenever the device is removed from their sight. This can lead to miscommunication within the household because the parent and child have no time to bond anymore since they are both now wrapped up in their devices. The way the study was conducted was "A large-scale cross-sectional survey was conducted among 10- to 15-year-old students and their parents. ASA and PSA were assessed by Mobile Phone Addiction Index (MPAI). The parent-child relationship was evaluated by Child-Parent Relationship Scale-Short Form (CPRS-SF), and parental bonding was estimated by Parental Bonding Instrument (PBI). The conditional process model was used to examine the relationship between PSA and ASA, as well as the mediating effect of the parent-child relationship and the moderating effect of parental bonding."

(Gong) what they found out from the study was that Adolescents were more likely to get addicted to cell phones when their fathers used them extensively.

Smartphone addiction could also be known as nomophobia (the fear of being without a phone). This is a real thing that people suffer from and can have a negative impact on their lives. From the article "NOMOPHIA NO MObile PHone PhoBIA" It states that "The term NOMOPHOBIA or NO MObile PHone PhoBIA is used to describe a psychological condition when people have a fear of being detached from mobile phone connectivity. The term NOMOPHOBIA is constructed on definitions described in the DSM-IV, it has been labelled as a "phobia for a particular/specific things". Various psychological factors are involved when a person overuses the mobile phone, e.g., low self-esteem, extrovert personality. The burden of this problem is now increasing globally." (Bhattacharya) this is a term many people do not think about but is very prevalent. People who suffer from this experience things like social anxiety or panic disorders from the time they do not have their phones. This is a problem because if someone can take your device away or a person so happens to lose it, they could go into a full meltdown or lock themselves in a room until they get another device in their hands. This is a very serious disorder because normal things like that would not make a person break down so easily. It is complicated to pinpoint if a person is suffering from nomophobia because there is a whole list of other diagnoses that it could be so labeling it that can prove to be a challenge. "The signs and symptoms are observed in NOMOPHOBIA cases include- anxiety, respiratory alterations, trembling, perspiration, agitation, disorientation and tachycardia. NOMOPHOBIA may also act as a proxy to other disorders. So, we have to be very judicious regarding its diagnosis. Some mental disorders can precipitate NOMOPHOBIA also and vice versa."

(Bhattacharya) What we should do as a result, rather than outlawing mobile phones, we should limit their usage since we cannot avoid the drive for technological growth.

Smartphone addiction is getting so out of hand to the point where these people that suffer from nomophobia are texting while driving and doing more texting than driving. It is already known that we are not supposed to be using our cellular devices when we are operating a vehicle but that does not stop people from doing it anyways. All the commercials and ads we see on television are not stopping people from using their phones while they are driving if anything it makes them use them more and it is kind of ignorant. According to an article titled" The mediating role of smartphone addiction on the relationship between personality and young drivers' smartphone use while driving" it states that "Young drivers touch their smartphone screens for a number of reasons (to access text messages, Internet, social media, games, music, videos, and more), but doing so increases the likelihood of accidents… It focuses on the mediation effect of smartphone addiction on the relationship between personality and smartphone use while driving, using an objective measure—the number of times young drivers touch their smartphones, measured by a unique smartphone monitoring application." (Kita) this study is showing that young drivers are using their phones while driving at an exponential rate. The fact that this application that was made is tracking how many times these drivers are touching their phones should raise some sort of concern because we are not supposed to using them while driving in the first place. If you need to go somewhere and need the map, that is supposed to be done before you hit the road to say. The results from this study showed that "participants touched their smartphones on average 1.71 times per minute while driving. They also indicate a negative relationship between participants' openness to experience and smartphone use while driving, a positive relationship between both extraversion and neuroticism

and smartphone use while driving, and a mediation effect of smartphone addiction on the relationship between neuroticism and smartphone use while driving." (Kita) that number is very high for only being in a span of one minute, young drivers should be paying more attention to the road because most young adults' accidents happen before they are even old enough to do most things by themselves.

Smartphone addiction also comes with side effects that people normally don't think about for example wrist pain, thumb pain, or even eye problems from staring at the screen for so long. Long use or holding and scrolling of smartphones can have negative effects on the body that are not thought about when people are sitting there mindlessly scrolling. From the article titled "The association between smartphone addiction and thumb/wrist pain A cross-sectional study," stated that "Many smartphone users experience pain in the thumb/wrist. This pain can be due to certain types of hand injuries as well as inflammation of the extensor pollicis brevis and the abductor pollicis longus tendon sheaths, known as De Quervain tenosynovitis. The objective of this study was to evaluate the association between smartphone addiction and wrist/thumb pain and to determine the severity of the pain, as well as to calculate the prevalence of De Quervain tenosynovitis among medical students at King Abdulaziz University (KAU) in Jeddah." (Baabdullah) This study showed the relationship between holding and using the smartphone and the effects that it had on the human body. The study showed that "74 (19.1%) had a positive Finkelstein test. There was a significant correlation between smartphone addiction and high PRWHE scores (P = .036) the prevalence of smartphones addiction among university students is high (66%), furthermore, a correlation between heavy smartphones usage and hand pain was found which indicates that heavy usage of these devices can cause subclinical effects on the human hand." (Baabdullah) This is a high number of students that seem to suffer from

smartphone addiction and the number of students is most likely growing at a steady pace. What these students came to realize was that they were experiencing these wrist and thumb pains when they were using the phone so heavily.

A very common thing for people to do is when they are feeling a sense of boredom to go ahead and pick up their smartphones to help the time go by faster. It is very common for people when they are in that state of mind to get lost mindlessly scrolling. According to the article titled "Addiction and Impulse Purchasing: A Field Study with Young Consumers in Turkey," it states that "The study seeks to understand the effects of boredom proneness on impulse purchasing and smartphone addiction of young consumers. Moreover, the possible mediating role of smartphone addiction is tested for the effect of boredom proneness on impulse purchasing. Nowadays, the effect of emotions on human behavior is generally accepted, and boredom is one of the important and common problematic feelings or moods at various levels of life due to factors like unemployment, not being able to work in a suitable job, not getting appropriate education matching individual abilities, monotony of tasks, and feeling life is meaningless. Investigating the effect of boredom on specific consumer behavior would increase our knowledge about consumer behavior. For the research, a survey was conducted 313 students from Kirikkale University, Keskin Vocational High School; the data were collected by convenience sampling method. The data were processed through statistical tools like exploratory factor analysis, coefficient alphas, and regression analysis. The results of the study reveal that boredom proneness affects impulse purchasing and smartphone addiction. In addition, it is understood that smartphone addiction plays a mediating role in the effect of boredom proneness on impulse purchasing. These results indicate that boredom can be an important factor affecting certain negative consumer behaviors." (Bozaci) These behaviors that people are experiencing cause

them to subside and start experiencing symptoms of smartphone addiction because of the pure boredom that they are going through. A quick fix for this problem would be to pick up a book instead.

Applications believe it or not have a way of taking control over someone. These applications nowadays have some sort of programming, colors, or sounds that make people stay on them for long periods of time, and it has the possibility of disrupting people's mental states. When researching I came across this one specific article that was using a smartphone application addiction scale that seemed to give off some good results. According to the article titled "The Psychometric properties of the Smartphone Application-Based Addiction Scale (SABAS)" states that "The goal of the study was to validate the English version of the Smartphone Application-Based Addiction Scale (SABAS; Csibi et al. 2016), which is a short and easy-to-use tool for screening the risk of smartphone application-based addiction. Another aim was to identify the most frequently used smartphone applications and their perceived importance by the participants... The instruments used were the SABAS, the Nomophobia Questionnaire (NMP-Q), the Brief Sensation Seeking Scale (BSSS), the Deprivation Sensation Scale (DSS), and the Patient Health Questionnaire (PHQ-9)." (Csibi) This is sort of related to the application we are trying to build. This application has one similar idea that we had in the aspects of this application trying to identify the most frequently used application, for our application we aimed to have the person who is trying to cut back on the screen time they are using place the applications into a folder that would have a set time limit so the person is not allowed to use the application for the rest of the day. The results showed that "The English version of the SABAS appears to be a valid and reliable ultra-brief tool for a quick and easy assessment of smartphone application-based

addiction symptoms." (Csibi). This was a good study that was done by this group because it gave some insight into what to expect if we were to do some sort of things like this one.

Overview of Problem/ Solution.

Anti-smartphone addiction as a whole is related to basically all the classes I have taken here at Old Dominion University. I mean this in the way of no matter what class I go and sit in, no matter how big or small it is, there are always students in my classes who would choose to come in and sit in front of the teacher and still use their cellular devices. See, the problem is not that they are using their phones or devices to take notes or anything because that is fine. The problem resides with the people who go on Instagram, Facebook, Twitter, Reddit, or TikTok instead of using the privilege that we were granted in the manner we are supposed to. Teachers understand that technology is quickly advancing and do not want to stop people from using them in their classes because some people learn better that way. The problem of people having smartphone addiction problem relates to for instance the ethics class I have taken here at Old Dominion. By definition from the school, psychology is "An application of psychological principles and research to human behavior in work settings. Among the topics covered are personnel selection, training, and evaluation; employee motivation and job satisfaction; and organizational leadership and theory." (ODU) when we are here getting our education it is basically as close as it comes to a work setting and I feel like when you are using your phones in front of the professor instead of actually doing work, for one is disrespectful and two it shows that the person does not care about the material that is being brought to their attention. I chose psychology because it is the study of human behavior in a work setting and using your phone instead of listening to the teacher could be a good study within that major. Asking questions like what compels you to use your phone instead of listening? Or what applications are you using that

are taking away your attention from the class? And why? These types of questions could help us with finding out what type of applications we could put in that folder with the time limits. Smartphone addiction grabs people's full attention and takes it away from what they are supposed to be focusing on.

Another example of a class I took here is pre-calculus two, I have witnessed people using their phones while the instructor was going over notes for modules, Homework, quizzes, and as well as tests, and the people who are the ones showing signs of smartphone addiction are the first ones to ask for help outside of the classroom from their peers. It is a simple concept, come to class, take notes, and leave but since they were glued to their cell phones, they missed almost 90% of what the teacher had to say. Smartphone addiction can strike anywhere and the people whom I witnessed were not paying attention in class are the same individuals who are not taking notes and are the first ones to stop coming to class. These people whom I saw using their phones instead of listening are the same people that are saying a professor is bad because of their teaching style but, how could an individual talk about a professor's teaching style if they were not listening, to begin with? These are the same people who are failing the test and quizzes, and also forgetting about assignments because when the professor was talking about it their smartphone addiction was running rampant and took over all of their focus to mindlessly scroll on and on again to look at pictures and videos. It is not wrong to use your cellular device in the classroom to do notes or anything but as soon as you stop taking notes and go to messages or an actual application is where it turns into a problem. Smartphone addiction can have this effect on people and it is hard for them to realize that it is happening so, with the application of our anti-smartphone addiction application would help people with recognizing this.

Overview determining if the innovation is effective.

There are couple of ways to determine whether the innovation is effective and working. The first way would be within the application for people using it would be asked to complete some sort of review on the application to say what they like about the application, what they do not like, and what they think could be changed within the application to make it better in general and run smoother, a rating system so out of five stars where would you place the application, a spot for comments and concerns and we could also check how many people actually downloaded the application. I think that checking how many people downloaded the application is a good first step because it would show that we have numbers and that we did not make an anti-smartphone addiction application for no reason. I also feel like looking at where the application is rated based on the stars bases would be the second best way to determine if our application is being effective or not. If majority of the people are using the application but rating it at a one star, it would tell us that our community of people do not like something about this application so we should probably go in and fix that. The next best way to check if our application is effective or not would be to look at the comment section. It is important to hear what the people are saying about your application, it is always good to receive feedback that is how we know as the creators of the application what we need to fix or update. Maybe someone suggests a new feature they think should be added but puts it in the comment section under the reviews, there is no way to tell if you are not reading them and taking that positive feedback back. The final thing would be to look at the number of downloads we are receiving. I think this could be an indication if the application is doing its job because if it was not people would not let it take up the space on their phones.

What is needed

To turn this anti-smartphone addiction application into reality there are a few things that need to happen the first would be having to conduct market research to find out what type of things people with smartphone addiction actually suffer from and what would benefit them in the application. It does not make sense to have these people who suffer from nomophobia use an application that does not tend to their needs and help them improve their situation because the goal of the application is to help people get off their phones as much and not to see how many downloads the application could get. So, conducting market research to look at what these people actually suffer from would help with getting insight into the problem at hand. Another thing that would help with making this application come to light would be doing background research on other applications to make sure that the app is not just a copy and paste of another application it has to have some sort of originality to it or there is no clear difference between your application and the competitors, whose application has been around for long. What a good idea to do would be to go to the competitor's application reviews and read what people who have used their application are saying and fix/ build off of those problems to ensure to the people if they come to use our application, we do not have those problems that they were over faced with the competition.

The next thing that could help this application come to reality would be finding investors that could help with funding the application. If we could get someone to put their faith in our cause it could help speed up the process of actually getting the application in the store and it would help the development process of the application itself. If there is anything I have learned

while being in college it is it is not about what you know but whom you know if we could get an investor to back us that has connections let's say to a company that has developers for applications that could help push our project along so we could start helping people with our application. Another thing that would help is talking to different advising individuals so that we know we are siding with the right person. It is really easy to talk to the wrong person so if you go around putting your faith and trust in every person that says they would give you a buck, there is a big chance your application and idea that was worked on for so long and hard could go to waste. So, I think talking and finding the right investors could lead our application to come to light and become a reality.

The last thing that could help this application come into reality would be having a business plan when it comes to how the application is going to be run, what software it is going to run, what platform it will be on, and all of the expenses needed to fund this project. In our business plan, we should think about the people who would want to download our application because of not want to be labeled as someone with smartphone addiction. Some people might think it is embarrassing to suffer from this, but it is actually more common than people tend to realize. The thing people need to get passed is the diagnosis portion of it so they can start getting help. So basically having a set plan for the application that will set it up for success and having backup plans in place just in case something does not work the first time around. Getting in front of those barriers that would stop the application from being successful like finding/ locating a platform on which to build an application. Obtaining a safe and trustworthy platform might be challenging because hackers can easily create compromised sites. So that is why it is important to have backup plans.

Summary

The next steps that would be taken to developing this application would be actually

designing it and since we like to come prepared we have a design of what the application would
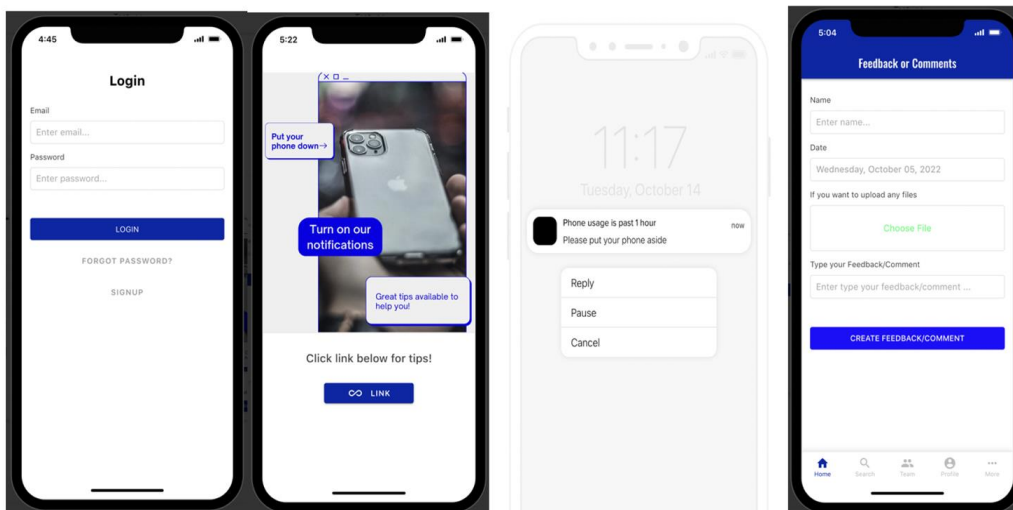
look like.

This is what the application would look like in the next step of development. Following

this step, the application would go onto the application store and would then be downloadable to

anyone with an IOS or Android so we can make sure that we are reaching as many people as we

can because smartphone addiction does not discriminate between what type of device a person is

using. Following putting up on the application store we would then work out any bugs that are

found within the application and do any necessary updates and patches to make sure the

application is always running as smoothly as possible. After some time has passed, I think a good

idea would be to send our customers personal emails to check on them to see how they are doing with their smartphone addiction problem.

Self-Reflection

Dear director of the advance technology center,

This application is, is an anti-smartphone addiction application and the main goal of this is to help people who suffer from smartphone addiction or also known as nomophoia (fear of being without a phone) As just a reaction, the team and I came up with the idea of creating anti-smartphone addiction software to aid with this problem. An application that should aid in the fight against mobile phone addiction. What I learned from doing this project was for one what nomophobia was and how much of a serious deal it was. The next thing that I learned was how to use my newfound entrepreneurial thinking and pair it with literature research to produce a comprehensive idea that showcases those abilities. I learned how to be clear and succinct communication regarding entrepreneurial endeavors that are required. I also learned how to Create an evidence-driven effort, endeavor, or business. I also learned to apply numerous perspectives to scholarly knowledge concerning an entrepreneurial endeavor.

Determine an appropriate technique for evaluating an innovation. I think students would find value in my project in the ways of my project having credible sources and information that could be used across many different genres of work. Even though I was trying to develop an application there is still a lot of information that could be put to good use in my research paper. One thing I would do if you were to seek out a future consultant is find a platform to develop the application and do the necessary work to get it put up on the application store. I feel like this application could help a lot of people including myself and if I were able to put it up on the app store I would

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