Undergrad Thesis Prospectus

Wing: The in Person Dating App

(technical research problem in Computer Science)

The Struggle over Social Media's Place in the Lives of US Teens

(sociotechnical research problem)

by

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General research problem

How can people promote a shift from online to in person interactions?

Social interaction is vital to mental and physical health. More sociability has been linked to higher self esteem and less depressive symptoms (Pachucki 2014). Many studies show that quantity and quality of social engagement lead to lower risk of death. Berkman and Syme (1979) showed that those with few social ties have double the risk of death. Brummett (2001) found that of adults with coronary artery disease, the socially isolated had 2.4 times the risk of death than the socially connected (Umberson 2011). To maximize wellbeing, social interactions should be a priority. Gwendolyn Seidman's (2022) study finds that while online socialization has a more positive effect on mental health than no socialization, face-to-face interaction yields the best results. Clinical Psychologist, Alexandra Hamlet, says in Hamlet's article on social media and depression: "The less you are connected with human beings in a deep, empathic way, the less you're really getting the benefits of a social interaction" (Hamlet n.d). To maintain mental and physical health, in-person interactions should be exercised.

Wing: The in Person Dating App

How can a mobile dating app increase the frequency in which users meet in person?

The app will use Bluetooth Low Energy (BLE) to connect with other nearby phones and determine if the users are compatible. If so, the app will notify the users encouraging them to meet. I am working on this project alone for the computer science department guided by Professor Rosanne Vrugtman. My goal is to have a testable proof of concept this semester and publish the app next semester.

The user experience is simple and focuses on in-person interactions over time on the app. After creating an account, the user is taken to the home screen where they can turn on Wing. This activates BLE scanning and advertising allowing the user's device to search for other nearby users' devices. Once a connection is made, their user ID is shared via BLE. The server gathers user information – age, gender preferences, and answers to personality questions. If the match is compatible, it notifies each user to meet the other. The users see a profile photo of their match, so they know who to look for. Each user will be given the option to decline a match before their picture is shared. Users should only accept a match if they are in a safe/public space to meet a stranger.

Existing dating apps all follow the same structure of swiping through pictures of other users. The first interaction is always messaging online. In contrast, Wing is active; users must leave their home to find matches. The first interaction must be in person. Wing is technically possible; however, app background refresh can only occur every 15 minutes limiting its effectiveness when the app is closed. By the end of this project, I plan to publish the app to various app stores with the goal of promoting in person interactions.

The Struggle over Social Media's Place in the Lives of US Teens

In the US, how are teens, social media platforms, figures of authority, and alternative advocates competing to shape perceptions of the proper place of social media in teens' lives?

How does social media influence the lives of youth in the US? How are parents, teachers, and the US government taking action to ensure teens have positive interactions online? What alternatives are advocates promoting? Teen's use of social media use is rising in the US as one study shows 95% of teens are online (Vogels, 2022). Social media can help the youth, especially

in marginalized groups; individuals can find common ground with others online. However, the US Surgeon General's Advisory asserts that 46% of adolescents aged 13-17 feel social media hurts their body image, almost two thirds of teens view hate-content online, and excessive use hurts sleep patterns and can cause depression (Office of the Surgeon General 2023). One study shows that more social media accounts correlate to DSM-5 symptoms of inattention, ODD, anxiety, and depressive symptoms (Barry, 2017).

Social media platforms have large and growing teenage user bases. Ad revenue drives profit for social media companies, and one survey shows that Instagram is the best way to reach the teenage audience (Burszytynsky, 2019). Social media companies are financially incentivized to increase teenage use. Many social media platforms, such as TikTok, use algorithms and artificial intelligence to tailor content to the user which can be addictive (Petrillo 2022). According to Statista (2023), 77.7% of U.S Gen Z TikTok users believe the app to be addictive. While 9% of teens say that social media has had a negative effect on themselves, 32% of teens say social media has had a negative effect on others their age (Vogels 2023). Teens recognize the risks of addiction, acknowledge it can have negative effects on others, yet still feel they are personally immune to the consequences of social media. Social media companies have developed platforms that are addictive and dangerous to the youth of the US.

Recognizing the negative impacts, parents restrict use; 69% of parents of 13-14 year olds and 46% of parents of 15-17 year olds limit their teen's time online (Anderson, 2016). State legislatures are introducing new bills to protect minors online with task forces, required age verification, and digital media literacy courses in schools. 11 states have active bills while 35 have bills pending (NCSL, 2023). Teachers help by educating students on the best practices to prevent and handle cases of cyber bullying. One study finds that most schools recognize

cyberbullying as a problem and try to solve the issues (Vandebosch, 2014). Teens seem to be unaware of the harm from social media or unwilling to make change themselves. Parents, teachers, and US state legislatures have taken action to help.

Over the past years, activities that promote offline behavior and social connectivity have been increasing in popularity. Pokémon GO is an app released in July of 2016 and reached 260 million downloads that year (Iqbal 2023). It is an augmented reality (AR) game where users explore the outdoors to search for fictional characters called Pokémon using their mobile devices. Its immediate popularity is attributed to its connection to a well-known franchise, Pokémon, and its interactivity. Users are incentivized to go outside, walk several kilometers, and work with others for a common goal. Jennifer Langston (2017) writes about a University of Washington study revealing that parents who play Pokémon GO with their children spend more quality time and have more conversations with their children.

BeReal is a new app that engages over 73.5 million monthly users and was the most downloaded app in July 2022 (HelpLama 2023). The platform encourages authenticity and transparency by prompting users to take one picture once a day, at a randomized time. BeReal's mission and values are, "To create an authentic world that keeps you connected with the people you really care about" (BeReal n.d). According to Statista, 59% of Gen Z BeReal users in the UK use the app for less than 15 minutes per day. This is far lower than daily TikTok use with 31% of users spending 1-2 hours daily and 25% between 3 and 4 hours. BeReal offers a compromise between staying connected online and reducing social media use.

HotBlack Coffee café is a Canadian chain that declines to provide Wi-Fi to customers. This was an intentional decision made by the president, Jimson Bienstock, who says, "It's about creating a social vibe" and "we're a vehicle for human interaction, otherwise it's just a

commodity." Bienstock knows of the health benefits of social interaction and chooses to promote it in his shops. Café chain Grumpy has also removed Wi-Fi from 7 of its 8 locations in New York City to encourage customers to talk and make connections (Brody 2017).

LOG OFF is a youth led advocacy promoting healthy relationships between young people and social media. Their goals are to reduce teen's time spent online and encourage online balance for wellbeing. They site that "95% of youth ages 13-17 report using social media platforms, with more than a third saying they use social media platforms almost constantly" (LOG OFF n.d). Emma Lembke started the advocacy while a sophomore at Washington University. In an interview with the New York Times, she explains how social media has harmed her well-being. She spent hours a day online "mindlessly scrolling, absorbing all of these unrealistic body standards" which in turn caused her to develop an eating disorder. She says LOG OFF provides a safe space for teens to share how social media has affected them. The goal is to validate teens in their experiences and to educate teens on online safety. Lembke feels that with more conversation about the harms of social media, "we can move forward with technology and allow it to become a tool again rather than a controller" (Halpert 2022).

References

Anderson, M. (2016, January 7). 1. how parents monitor their teen's digital behavior. *Pew Research Center*. https://www.pewresearch.org/internet/2016/01/07/how-parents-monitor-their-teens-digital-behavior/#:~:text=Parents%20of%20younger%20teens%20(ages,to%2017%2Dyear%2Dold s.

Beyens, I., Jelenchick, L. A., Pittman, M., Przybylski, A. K., Radovic, A., Rosen, L. D., Sampasa-Kanyinga, H., Woods, H. C., Baker, Z. G., Barry, C. T., Bernat, D. H., Burnell, K., & Coyne, S. M. (2017, September 5). Adolescent social media use and mental health from adolescent and parent perspectives. Journal of Adolescence. https://www.sciencedirect.com/science/article/pii/S0140197117301318

Brody, J. E. (2017, June 12). Social interaction is critical for mental and Physical Health. *New York Times*. https://www.nytimes.com/2017/06/12/well/live/having-friends-is-good-for-you.html

Halpert, J. (2022, June 14). A new student movement wants you to log off. *New York Times*. https://www.nytimes.com/2022/06/14/style/log-off-movement-emma-lembke.html

Hunt, G. (2023, October 20). Bereal Usage Statistics. *Helplama*. https://helplama.com/bereal-usage-statistics/#:~

Jbursz. (2019, April 8). Instagram is the best way to market to teens, says Piper Jaffray Survey. *CNBC*. https://www.cnbc.com/2019/04/08/instagram-best-for-marketing-to-teens-snapchat-second-piper-jaffray.html

Langston, J. (2017, March 28). Parents who play "Pokémon go" with kids: "it wasn't really about the pokémon." *UW News*. https://www.washington.edu/news/2017/03/28/parents-who-play-pokemon-go-with-kids-it-wasnt-really-about-the-pokemon/

LOG OFF. (2023, September 22). About Us. https://www.logoffmovement.org/about/

NCSL. (n.d.). Summary social media and children 2023 legislation. National Conference of State Legislatures. https://www.ncsl.org/technology-and-communication/social-media-and-children-2023-legi slation#:~:text=Concerns%20minors%20and%20social%20media,than%2016%20years%2 0of%20age.

Our mission and values – bereal help center. BeReal. (n.d.). https://help.bereal.com/hc/en-us/articles/10738198628637-Our-Mission-and-Values

Petrillo, S. (2022, February 7). What makes TikTok so addictive?: An analysis of the mechanisms underlying the world's latest social media craze. *Brown Undergraduate Journal of Public Health*. https://sites.brown.edu/publichealthjournal/2021/12/13/tiktok/

Pachucki, M., Ozer, E., Barrat, A., Cattuto, C. (2014, April 15). Mental health and social networks in early adolescence: A dynamic study of objectively-measured social interaction

behaviors, Social Science & Medicine, Volume 125, 2015, Pages 40-50, ISSN 0277-9536, https://doi.org/10.1016/j.socscimed.2014.04.015.
(https://www.sciencedirect.com/science/article/pii/S0277953614002391)

Seidman, G. (2022, September 6). How do digital and in-person interactions affect wellbeing?. *Psychology Today*.
https://www.psychologytoday.com/intl/blog/close-encounters/202209/how-do-digital-and-in-person-interactions-affect-wellbeing

Umberson, D., & Montez, J. K. (2011, August 5). Social Relationships and Health: A flashpoint for health policy. *Journal of health and social behavior*.
https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3150158/

U.S. Surgeon General's Advisory. (2023). Social Media and youth mental health - hhs.gov. Social Media and Youth Mental Health.
https://www.hhs.gov/sites/default/files/sg-youth-mental-health-social-media-advisory.pdf

Vandebosch, H., Poels, K., & Deboutte, G. (2014, June 30). Schools and cyberbullying: Problem perception, current actions and future needs. *International Journal of Cyber Society and Education*. https://www.learntechlib.org/p/209181/

Vogels, E. A. (2023, April 24). Teens and social media: Key findings from Pew Research Center Surveys. *Pew Research Center*.
https://www.pewresearch.org/short-reads/2023/04/24/teens-and-social-media-key-findings-from-pew-research-center-surveys/

Vogels, E. A. (2022, August 10). Teens, social media and technology 2022. *Pew Research Center*: Internet, Science & Tech.
https://www.pewresearch.org/internet/2022/08/10/teens-social-media-and-technology-2022/