Ethical Implications of a Video Conferencing and Communication Software on Mental Health

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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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Abstract

This paper analyzes the importance of cloud-based video conferencing and communication software platforms during the breakout of a pandemic we're still dealing with and the concerns that arose from prolonged usage of softwares and their implementation throughout a variety of industries. The analysis is guided through a discussion of the Science, Technology, and Society framework of the Social Construct of a Technology by thinkers Pinch and Bijker - and how these ideas are relevant to the ethical challenges facing the emergence of such cloud-based software that allowed not just students, but also employees and businesses to continue to attend school or university and provide their services, respectively. There's also the businesses intent at play with their implementation of such technologies, but does intent always justify the outcome of the actions? In the end the analysis supports individuals to be conscious not just solely of key details in the relationship between social groups - relevant to technological innovation - but also the outcome of the intentions with the implementation of the technology.

Introduction

Video conferencing services like Zoom have seen a ten times increase in usage - active users increased 151% year over year in March, breaking its own records. On March 31, it had 4.84 million daily user volumes within the U.S., surpassing Microsoft Teams' 1.56 million users (Case, 2020). Along with the rise in the use of technologies such as Zoom and Teams, there's an increase in the concern of the implications with which people are regarded to adhere by

governments to socially distance themselves, therefore allowing businesses to more aggressively push for more potent usage of their video conferencing communication platforms - leading to the decline of physical activity and its correlation with mental health of students and employees. Applying the Science, Technology, and Society framework SCOT, by Science, Technology, and Society (STS) thinkers Pinch and Bijker will provide an ethical analysis to the usage of video conferencing communication platforms, like Zoom, and their impact on a reduced physical activity presence around the world, enabling individuals to fall victim to mental health issues that come from pros and cons of this technology, yielding an understanding of the technology's posing threat to their health. Moreover, the paper will also discuss the ethical impacts on the depletion in the number of people who have become less physically active and its correlation to the mental health of such individuals through SCOT, to provide insight into how different social groups - students, employees and businesses - perceive cloud-based video conferencing and communication platforms and their implications for technological gain (Pinch & Bijker, 1984).

Scope & Limitations of Research

This paper speaks on cloud-based video conferencing and communication platforms innovation and the relationship between students, employees and the businesses who provide the means for the platforms. Work that has been published in the past surrounding the correlation between the decrease of physical activity and mental health, typically involves conversations with regard to lack of social interactions, and lack of mobility. Similarly, since Covid-19 - with governments placing restrictions and lockdowns - social distancing became a normality in our world leading to a more distant community, which in turn meant the gap between relationships

between individuals, employees, and their workplace or place of business were doomed. This paper offers a unique perspective of using the STS framework, Social Construction of Technology (SCOT), to further describe and understand the implications of human driven technology innovations and the effects it has on mental health when it comes to differing values among two entities: direct/indirect users and businesses/designers and their plans for such platforms.

Roadmap of the Research

As we advance through the sections of this research paper we will begin with the background as it pertains to the functionality of video conferencing and communication software and its application by businesses. Following this, I describe the methodology of the analysis by defining the SCOT framework using the work by Trevor J. Pinch and Wiebe E. Bijker to progress our understanding of the ideas that will be presented with the ethical concerns in relation to mental health with the prolonged usage of video conferencing and communication software, like Zoom or Teams. Continuing, the conversation will provide definitions for mental health and physical activity as it pertains to the research paper and give examples of how adverse effects on the mental health of individuals due to the continued usage of video conferencing and communication software. This will be followed up by tying in the ideas of SCOT to the ethical concerns of mental health with the prolonged usage of such technology, through a conversation on the government's and businesses' intents for the technology and what really happens as a result of the circumstances of individuals and how this technology makes it easy for that trait to be exploited. The ideas as it relates to the SCOT framework will help individuals understand the

framework's main theory - technology does not determine human action, but rather, human action shapes technology. In the latter of the paper we will discuss counter arguments to represent both sides and provide a fair and concise overview of everything that comes with platforms like Zoom or Teams. As we wrap the conversation up, we will close the discussion with the importance of such an analysis.

Functionality & Application of Cloud-Based Video Conferencing, Communication Platforms

Cloud-based video conferencing and communication platforms, like Zoom and/or Teams, systems that provide the experience of adding video to a phone call, initially were developed for that exact purpose. "'I was only able to see her twice a year and it took more than 10 hours to get there by train,' Yuan told Forbes in 2017. 'I was young then — 18 or 19 years old — and I thought it would be fantastic if in the future there was a device where I could just click a button and see her and talk to her.'" (Rogers, 2020). This scenario sparked the idea in Yuan's head to build such a system in which it would be possible to have such functionality and he intended to make it more user-friendly - hence the multitude of virtual backgrounds available for Zoom users. Zoom users are able to participate in HD video and audio meetings, call into meetings with simply their phone if they're not near their laptop, are able to set up separate rooms within the one meeting, and lastly control the flow of participants in rooms which works for privacy (Rogers, 2020). Due to systems like Zoom and their capabilities to connect people from all over the world, virtually face-to-face, it allowed for not just students and employees to benefit from this, but also the businesses that needed to continue their day-to-day operations to remain at bay during the pandemic. The following ethical analysis under the SCOT framework by Pinch and

Bijker will mostly draw from examples catering to the specific implications of prolonged usage of platforms such as Zoom and Teams.

As cloud-based video conferencing and communication platforms continue to make headway into industries and slowly become an integral part of the workforce and everyday life, it is important to note key aspects surrounding the topic of such platforms - inclusive of the ethics revolving around the mental health implications of prolonged usage of such technologies.

A SCOT analysis revolving around the Ethical Issues of Virtual Communication Software

Methodology (of the analysis by defining the SCOT framework)

In "Zoom's practices violate our human right to privacy," by Jessica Goodfellow, the ethics here speaks to Zoom's allure, in it being really easy to use - even for those a lot less tech savvy - however, making it clear that functionality was being more overly prioritized than security. (Goodfellow, 2020) . The idea relates to the SCOT framework and will help individuals understand the framework's main theory - technology does not determine human action, but rather, human action shapes technology. This concept focuses on how the development and use of a technology can be a convoluted process among relevant social groups. Interpretive flexibility, a component of the SCOT framework, "Suggests that technology design is an open process that can produce different outcomes depending on the social circumstances of development" (Klein & Kleinman, 2002). The component of the SCOT framework can be applied to the ethical concerns surrounding the prolonged usage of video conferencing platforms as a communication software since not only privacy concerns arose, but also effects such as

mental health due to the inactivity in physical activity. Whereas the social circumstances in this case in regards to the social groups involved, including students, employees, and businesses and their interpretation of the technology. For example, having the idea of such a technology come from the thought of an individual wanting to simply have a way in which he could see his girlfriend while also talking to her, left a lot of room for development issues, in terms of privacy, how the technology would be used, and the outcomes of its prolonged usage - in contrast to in-person social interactions.

Social Construct of Cloud-Based Video Conferencing, Communication Platforms

In the Science, Technology, and Society framework of the Social Construct of a Technology by thinkers Pinch and Bijker, social construct is defined as that which implies that technology not only affects society, but is also shaped by society. Following this, we also learn about the four components that make up the SCOT conceptual framework: interpretive flexibility, which we have introduced in this paper already to mean that a technology design is an open process that can produce different outcomes depending on the social circumstances of development. Relevant social group - "all members of a certain social group share the same set of meanings, attached to a specific artifact" (Pinch and Biijker, 1987). Closure and stabilization - "A multigroup design process can experience controversies when different interpretations lead to conflicting images of an artifact." The wider context - "that is the wider sociocultural and political milieu in which artifact development takes place" (Klein and Kleinmann, 2002). This analysis will touch base on primarily the first component of the SCOT framework as it relates in

part to the control businesses have over the prolonged usage of students and employees of such technology and how it affects the mental health as a result of the decrease in physical activity.

Students face enormous stress in the classroom, while employees face hardships in the workforce and in their lives, including peer pressure, work overload, and high stakes testing. Exercise controls the emotional and physical feelings of stress, and it also works at the cellular level. Physical activity is a natural way to prevent the negative consequences of stress because it can ward off the ill effects of chronic stress and actually reverse them. Additionally, studies show that people who add physical activity to their lives have become more socially active, which boosts confidence and helps establish and maintain social connections (Barile, n.A). In being more socially active students decrease their chances of mortality. Studies consistently show that individuals with the lowest level of involvement in social relationships are more likely to die than those with greater involvement (Umberson, 2011). This example further formulates the question on where to draw the line in the use of cloud-based communication for the continuation of day-to-day activities, such as a student attending school, or an employee working from home where it may be less beneficial to these groups of individuals to be staring into a screen all day rather than actively participating in activities and just use these platforms as sort of a check in.

Counter Arguments

Although for the majority of this paper I have spoken about the concerns that arose from the prolonged usage of video conferencing and communication platforms and the toll it takes on the physical activity one can aim to have, in turn negatively affecting the mental health of

individuals - one can argue that other social implications of such technology can have positive effects on an individual's well being. For example, when the world was scared and many people were going out of business and losing their jobs, these platforms allowed for companies to stay afloat and continue providing their services and keep up communication with the world. It allowed for businesses to continue providing for clients, for schools to further the learning of their students, etc.

Usage of Zoom has grown 1,900% since December as schools, universities, and workplaces have shifted online as authorities across the globe have asked people to embrace social distancing in order to slow the spread of the coronavirus (Rogers, 2020). With the global increased usage of Zoom due to the pandemic, we had to embrace social distancing. During a time like this, it makes it harder to live in a world where you don't know if getting too close to someone may not only be hurting yourself, but in turn affect your loved ones at home. Living in constant fear, without the possibility of seeing immediate family and at times living closed off in your own home, technology like Zoom, allowed for individuals to be happy to be able to see their loved ones even if it was through a screen. It provided some hope that one day again they'd be able to physically be together, while presently serving as a placeholder for better days ahead.

Conclusion

Analyzing the ethics within the prolonged usage of video conferencing communication software following the Science and Technology in Society framework, SCOT, is crucial due to an individual's understanding of how something as simple as involving oneself for long periods

of time in depth with technology of any kind, but primarily during a time like this, a pandemic, can have deep consequences for their mental health. SCOT allowed for me to note how businesses are able to gain and sell the public on such a software especially during a time where there was no other option, but to work from home, see loved ones virtually, and remain at home. All in all, seeing how much power there is in the government asking us to remain locked down in our homes, where as businesses can continue to hound us and give us the means to maintain ourselves occupied and working or learning, but there being clear evidence of lack of social interactions, mobility, physical activity, leading to people being more stressed and having higher levels of anxiety and overall worse mental health.

Having individuals interact with one another, hence social interactions of some sort, allow for us to have a more involved and togetherness to what makes up a solid community. Stress, anxiety, and a deep feeling of being alone caused a lot of havoc for some during a pandemic. It is understood by many the role we all played in keeping everyone around us safe by social distancing, respecting lockdowns, wearing masks when out in public, and so on. Nonetheless, social groups like businesses and governments also have to understand the mind and body of an individual and seek to keep our bodies safe while also stimulating the mind. Finding the balance between the two may seem like a near impossible task, but becoming aware of such consequences that long periods of time spent in isolation may have on individuals can really be life changing and shape the way we view technology and with what intentions we build them, in turn shaping society.

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