

Children's Use of VR: Seeking Social Connectedness During COVID-19 Isolation

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Abstract

The COVID-19 pandemic created unprecedented challenges that will forever change our world. The social distancing and stay-at-home orders issued by government officials closed businesses, schools, parks, and social gatherings. Many individuals were affected by the fallout of these orders, but no one so significantly as the children. On March 16, 2020, many American schools closed indefinitely due to the COVID-19 pandemic, and children transitioned to isolated online learning environments from the safety of their homes. The schooltime interactions that would normally promote social connectedness and student engagement are now gone. Children are idle at home and are spending significantly more time on their digital devices, which includes virtual reality (VR) headsets. With virtual reality multi-player games and social VR platforms, children can use digital relationships to meet their innate needs for social connection. This paper aims to identify how virtual reality can transport children across the social distancing boundaries and into virtual environments where they can connect with friends from around the world while never leaving the safety of their home.

Keywords: virtual reality, VR, social connectedness, COVID-19, children, social connection, belonging, coronavirus, pandemic, social VR

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The severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), also known as COVID-19, pandemic created unprecedented challenges that will forever change our world. The social distancing and stay-at-home orders issued by government officials closed businesses, schools, parks, and social gatherings (COVID-19: Information for businesses, 2020). Many individuals were affected by the result of these orders, but no one so significantly as the children (Robson, 2020). Many children were thrown into online learning environments where their teachers and classmates were only visible through a computer screen. Those quick, yet significant, schooltime interactions that happen during recess, during class, or simply while walking down the school hallway are now gone.

On March 16, 2020, many American schools closed indefinitely due to the COVID-19 pandemic (Coronavirus School Closures: LAUSD Closes All Schools, 2020). With minimal warning, children were forced to continue their studies via online learning platforms where their teachers were now viewable only via a computer screen. In November, nine months after many schools closed, many remain shuttered. Numerous children across the country are attending school online or in a non-traditional manner, such as a hybrid schedule where students attend both in-person and online classes on a rotating schedule. As of this writing, the COVID-19 virus has claimed the lives of nearly 260,000 Americans and the stay-at-home order remains in effect.

A.H. Maslow describes love and belonging as a human need and ranks Love and Belonging third on his hierarchy of needs, just above psychological and safety needs (Maslow, 1943). Yet, due to the pandemic, the schooltime interactions that would once promote belonging and social connectedness are no more. Children are idle at home and are spending more time on their digital devices, including virtual reality headsets (MacMillian et al, 2020). A post-pandemic study conducted by Carroll et al (2020) reported an 87% increase in screen time for recreational use amongst children. With virtual reality multi-player games and platforms,

children can use digital relationships to meet their need for social connection by visiting virtual worlds that know no boundaries and connecting with people from around the world.

Literature Review

The scoping review of the literature is divided into subsections containing the following topics: COVID-19 Pandemic, Belonging and Connectedness, Virtual Reality, and Virtual Reality for Connectedness. The following sections summarize the literature that was found pertaining to children's use of virtual reality during the COVID-19 pandemic to satisfy a need for social connection.

COVID-19 Pandemic

The Director General of the World Health Organization (WHO) characterized severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), also known as COVID-19, as a global pandemic on March 11, 2020, stating: "This is the first pandemic caused by a corona virus" (Adahanom, 2020). Two days later when the final school bell rang, students in the Los Angeles Unified School District left, not knowing when they will be able to return. Effective Monday, March 16, 2020 schools closed indefinitely (Coronavirus School Closures: LAUSD Closes All Schools, 2020). As of November 2020, eight months after the wide-spread school closures, the schools remain closed. As of this writing, the SARS-CoV-2 virus has infected more than 59 million people globally. Of those confirmed cases, over 12.5 million are citizens of the United States and nearly 260,000 of those U.S. citizens have died due to the COVID-19 outbreak (Coronavirus Resource Center, 2020).

Belonging and Connectedness

In a study conducted by Mínguez (2019) it was discovered that time spent with friends, as well as rewarding relationships with teachers and the school community significantly contribute to a child's wellbeing. With many schools closed due to the pandemic, and social distancing requirements keeping friends apart, the wellbeing of many children is likely strained. Children report deeply missing their friends and family (Carroll et al, 2020). Contact with friends,

family, and classmates is essential to the well-being of the child (Mondragon et al, 2020).

With the COVID-19 social distancing requirements and the fading social connections surrounding the school environment, there are significant limitations for children to fulfill their need for belonging. The third level of Maslow's hierarchy of needs is Love and Belonging (Maslow, 1943). Maslow (1943) asserted that once the psychological and safety needs are met, the individual attempts to fulfill their need for love and belonging. Rutledge (2011) identifies that love and belonging signify social connection and argues that Maslow's theory fails to identify that his hierarchy would not even exist without human interaction and social connection. Humans are social creatures, and we would not be able to begin to climb Maslow's hierarchy without social connection and collaboration as a foundation (Rutledge, 2011).

While Maslow's claim hierarchy is so widely acclaimed, his findings did not include original data to support his conclusions (Baumeister & Leary, 1995). Baumeister & Leary (1995) set out to take a deeper dive into Maslow's research to more concretely identify that the need to belong is, in fact, a fundamental human motivation. The review of the empirical literature supported the conclusion that interpersonal attachment, and the need to belong, are a vital part of human nature in both adults and children (Baumeister & Leary, 1995). As supported by Maslow's hierarchy of needs and solidified by the research of Baumeister and Leary (1995) children poses an innate need to belong and an essential desire for social connection.

Virtual Reality

Virtual Reality (VR) can be defined as a digital experience that alters the individual's sight, hearing, and touch while engrossing the individual within an alternative reality (Pope, 2018). Virtual reality experiences are created digitally, and the individual experiencing the digital world will often navigate that virtual environment via an avatar. An avatar is a virtual representation of oneself that often looks human-like (Greenwald et al, 2017). Avatars navigate

the virtual platform and interact with digital objects, as well as other virtual players. In 2013 the Oculus Rift was the first digital VR headset on the consumer market and available for public purchase. While the Oculus Rift was originally designed for gaming, developers have been expanding the use of virtual reality headset applications to be used for educational purposes (Pope, 2018). *Facebook* bought *OculusVR* in 2014 with a plan to push the boundaries of social VR, announcing their *Facebook Horizon* social platform for Oculus to be released in 2020 (Wang, 2020).

Virtual Reality for Connectedness

As technology has advanced since the time of Maslow, our needs as humans have not changed. Maslow's Hierarchy of Needs would not be possible without social connection and as technology advances our method of social connection advances as well (Baumeister & Leary, 1995).

Children's use of screen media, including video games and computers, has increased while they now have additional idle time due to COVID-19 stay-at-home requirements (Centers for Disease Control and Prevention, 2020). Carroll et al (2020) reported that recreational screen time use by children has increased by 87% post the COVID-19 pandemic. Due to the stay-at-home order, many children are idle at home and not playing outside with friends, attending school, or partaking in after-school athletic activities (MacMillian et al, 2020).

Belonging can be fostered through digital mediums (Allen et al, 2014). Digital connections can be as significant as a real-world connection, and children feel a sense of belonging with their digital friends (Davis, 2012). Research conducted by Davis (2012) discovered that youth are three times more likely to use digital media for casual online interactions, with their main motivation for using digital technologies being the ability to interact with friends (Davis, 2012). While we are beyond the technology days of MSN and AOL as cited

in Davis' study, social connections are extremely important during one's youth (Allen et al, 2014). A year after Davis' study was published, Oculus announced the first VR headset available for purchase by the consumer thereby further contributing to the technology and social connection evolution (Pope, 2018).

While social technologies continue to advance, new studies on real-time communication within multiplayer VR environments have been found to promote social presence and connection (Greenwald et al, 2017). "Same-time, same-place interaction in virtual reality has been shown without any doubt as a practical medium for communication and collaboration, which carries with it a sense of social presence that is adequate for a variety of non-verbal methods of communication mediated by hand gestures, head gestures, and overall spatial movement" (Greenwald et al, 2017).

Digital media is used to maintain a social connection through casual conversations when friends are physically separated (Davis, 2012). Social VR, such as *VRchat* and *AltSpace VR*, can immerse the user into a new world connected to people across the globe (Wang, 2020). Children can communicate in real-time using an avatar, or digital representation of themselves, fully immersing themselves in the digital world. With VR technology, children can enhance the feeling of social connectedness through non-verbal communications (Wang, 2020).

For children, virtual reality blends the lines between real life and a virtual simulation (Bailey & Bailenson, 2017). Friendships that are created in a virtual environment are just as relevant as in-person friendships. Virtual reality can break relationship barriers connected to time, distance, and safety (Beheshti, 2012). Virtual reality can unite children across time zones or thousands of miles apart, and virtual reality can break through social distance barriers by helping children build a bridge toward social connectedness (Wang, 2020).

Discussion

Additional research should be conducted specifically evaluating the effects of children during social isolation, and the unmet need for social connection during a pivotal time in their development on account of the COVID-19 pandemic. Age-appropriate digital environments, specifically for children, should be created to encourage digital social connection in a safe age-appropriate atmosphere. This paper did not review content related to technological security, nor the digital safety of a minor child. Further review should be analyzed regarding the safety and security of the child when navigating a social digital platform. Additionally, virtual reality headset technology is still considered to be cost-prohibitive. While the cost of VR headsets has decreased substantially since the public launch of Oculus Rift in 2013, the technology is still considered to be beyond the affordance budget for many individuals and families.

Conclusion

The feeling of belonging and social connection is instinctive in all human beings, and innate among children as well. When schools closed due to the COVID-19 pandemic many children were isolated within their homes, missing their friends and social circles within their school environment. To seek out connection and belonging the recreational use of digital devices by children increased significantly. Due to the stay-at-home orders of the pandemic, children were no longer playing outside with friends or partaking in after school athletic activities. Children were now at home connecting with friends via their digital devices.

While additional research should be conducted specifically evaluating the impact of virtual reality on social connection amongst children during the pandemic-induced isolation, the social VR technology platforms show promise. Children have a natural need to connect with one another, and virtual reality can be a way to promote social growth and connectedness. Social VR platforms can help meet the need for belonging and connection, allowing children to communicate with friends both verbally and non-verbally embodied within a virtual avatar. With VR technology friends can blur the social distancing boundaries caused by the COVID-19

pandemic and socially connect in a whole new digital environment.

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