

Can the use of Virtual Reality Headsets Help Reduce the Fear of Public Speaking?

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Abstract

Virtual reality (VR) headsets are a new technology being used to assist with social phobias and anxieties. This study focused on public speaking, which is one of the most common phobias that people face daily. In this study, the Virtual Orator, a public speaking simulator for use with a VR headset, was assessed. The simulation gave the participants the chance to give a speech in front of a virtual audience. The results show how the participants felt about giving a simulated speech, and what it looks like to utilize VR to prepare before giving a speech. Future implications for using VR headsets are discussed.

Keywords: VR, public speaking, anxiety, technology, headsets

Introduction

Public speaking is an everyday part of life. Digital media, college classrooms, and all kinds of businesses use a component of public speaking to convey information. A problem occurs when some people are terrified to talk in front of an audience. These individuals can have symptoms of hands sweating, dry throat, physical distress, and feeling pained. Glossophobia, or most commonly known as speech anxiety, can affect grades, promotions, and your very way of life.

Different researchers and psychologist have come up with different ways to help with this phobia. Some of these techniques have worked, but there are still opportunities to provide better treatment. Different forms of visual concepts are now being conducted to help with the fear of the public speaking. The form that is used in this research is a Virtual Reality (VR) simulation using the HTC Vive headset. VR is one of the newest forms of technology that is being tested for treatment of many psychological issues.

Virtual reality exposure combines aspects of cognitive behavioral therapy and in-vivo exposure therapy to reduce the fear associated with anxiety triggers. It allows people to work through their fears in a realistic environment without leaving a safe space. Virtual reality therefore allows scientists to recreate the essential features of a situation to trigger the fear reaction, at an acceptable therapeutic level, and thus allow patients to learn how to control it and encode in their emotional memory that the situation isn't dangerous. It may be surprising to learn that facing our fears in virtual reality can really help in real life. For this study, we used a VR headset simulation to see if it can help reduce the fear of public speaking or be a tool to prepare for a public speech.

Literature Review

The DSM-V, (Diagnostic and Statistical Manual of Mental Disorders), is a handbook that is used by psychologist, psychiatrists, and social workers to help diagnosis and help find solutions for some of these issues. According to the DSM-V "social phobia is the unreasonable or excessive fear of social situations and the interaction with other people that can automatically bring on feelings of self-consciousness, judgment, evaluation, and inferiority" (American Psychiatric Association, 2013). Social phobia has also been referred to as "the fear and anxiety of being judged and evaluated negatively by other people, leading to feelings of inadequacy, embarrassment, humiliation, and depression" (Roy et al., 2003, p. 411). Phobias are one of the most common mental disorders. "It is estimated that about 6% of the general population in the United States suffers from a phobia" (Garcia-Palacios et al., 2001, p. 341). Traumatic experiences or fearful events can occur during childhood, adolescence, and early adulthood in which the speaker could have endured a childhood experience related to public speaking. Genetics may play a role, as might evolutionary factors.

"Social phobia affects up to 13% of individuals at some time in their lives..and is often associated with moderate to severe functional impairment" of many facets of life (Harris, Kemmerling, & North, 2002, p. 543). It can be hard for people to explain or get their point across when they are not able to speak in front of an audience. People that experience public speaking anxiety avoid social or performance situations. If these situations become unavoidable they can feel intense anxiety and distress.

Individuals may underachieve at work or at school because of this anxiety and often avoid speaking in classroom situations. In more severe cases, they may drop out of school rather than face a feared situation, such as a class with mandated oral reports that constitute a significant proportion of the final course grade (Harris, Kemmerling, & North, 2002). Virtual Reality may be utilized to overcome some of the difficulties inherent in the traditional treatment of phobias.

VR provides a low-stress way to overcome this fear and improve speaking skills (North, North, & Coble, 2017). A lot of people cannot say what they need to speak successfully in front of an audience. In the public speaking realm, practice can instill individuals with confidence and positive attitudes toward speech performance. While it is public knowledge that practicing a speech is likely to improve speech performance, there is not much known about the effectiveness. Students in public speaking classes are often encouraged to practice speeches prior to delivering them. However, they may not always be informed of the various practice methods available to them, much less the overall effectiveness of these methods in facilitating one's desired performance (Smith & Frymier, 2006).

VR is a human computer interaction, in which users are the participants in a three-dimensional (3D) virtual world. "Most of the therapies using VR draw on the principle of exposure consisting in confronting and accustoming the patient to the stress situations" (Smith, & Frymier, 2006, p. 115). Virtual reality allows the presentation of virtual objects to all the human senses in a way close to their natural counterpart. This technique attempts to replicate in-vivo exposure and reduce the fear associated with these triggers. Eliminating many constraints of the real world, VR seems to bring significant advantages by allowing exposures to numerous situations through the creation of a strong feeling of presence in the situation (Klinger et al., 2005).

Methodology

After getting the approval from the IRB, participants were recruited through the university summer school program. The only inclusion criteria was that they needed to have some fear of public speaking. The fear could be on the scale of minimum to extreme. Participants were also used if they were not sure if they had a fear of public of speaking.

Once all participants had read and signed the consent form the data collection began. The participants filled out a Likert-type survey that had 34 questions such as: "while preparing for a speech, I feel tense and nervous and my hands tremble when I am giving a speech." The answers to the question ranged from strongly disagree to strongly agree with neutral in the middle. This survey was based on previous research.

The simulation used was a program called Virtual Orator. The participants, while in this simulation, saw themselves in a classroom with students sitting waiting on them to speak. An HTC Vive headset was the product used to help participants see this virtual world. This system is used with a room scale aspect that allows the participants to move around while giving the speech. The participants started speaking once the audience clapped. They only gave an impromptu 1-minute speech about their summer plans and no one except the researcher was in the room while participants gave their speech.

Discussion

In this study, 91% of the participants agreed that the simulation can be used to help prepare them for a speech. The information confirmed the researchers' hypothesis. 9% of the participants did not agree that it can be a tool to help but all stated that the simulation could help others. Overall, the simulation proved to be very effective. The audience avatars who were students acted the way students would in classrooms. They moved around, talked on their cell phones, and seemed to not pay attention to the speaker. Some of the virtual students even had their heads on the desk as if the speaker's speech was uninteresting. One of the best features was that the virtual students clapped when the speaker began and clapped when it ended just like a class would in the real world.

The simulation also gave feedback on the speaker's speech after analyzing measures like voice modulation and pitch. It allowed for a debrief in which the researcher explained to the participant what things within the speech could be worked on. Examples of comments that simulation gave was that the speaker talked single-toned. The simulation let the speakers know that their voice was too low or too high. It also said that speaker on focused on the front or back row verses the entire room. This feedback let the speakers know what things they need to focus on. This feedback should be able to help them when they are given a speech. Some participants even mentioned that they felt like they knew what the problem areas were in their speech.

The limitations for this research study include: (1) the number of participants. If the sample (n) would have been greater, the study would have been more generalizable. (2) The VR equipment is expensive so everyone is not allowed to operate it. It also bulky and has to fit in a room that is at least 10 feet x 10 feet. (3) The amount of times the participants used the simulation. Because of the time constraints, participants were only able to do the simulation once. Future studies would include more, diverse kinds of participants. We would also conduct a longitudinal study in which the participants used the simulation many times over days or weeks.

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