Facilitator‘s Guide for Simulations

Fostering Authentic Inclusion and Accessibility

For an electronic version of this facilitator's guide please visit:
https://sites.google.com/view/user-guide-for-vr-simulations/home

PRODUCED BY PROJECT PARTNERS: NIAGARA COLLEGE CANADA, BROCK UNIVERSITY AND XPERT VR THROUGH FUNDING PROVIDED BY ECAMPUS ONTARIO AND THE GOVERNMENT OF ONTARIO

WELCOME

You have decided to be involved as a facilitator of a VR accessibility and inclusion awareness workshop.

As a facilitator, you will guide workshop participants through their full experience with all components of the workshop from arrivals and introductions, to using the headsets and controllers or laptops to engage with the four scenarios, to trouble-shooting and problem-solving in the moment, and debriefing and reflecting on the content and processes in the scenarios once the participants have completed the scenarios.

The workshop offers participants **the opportunity to encounter experiences** that disabled people have in work, education, service-based, social, and interpersonal contexts on a day-to-day basis. These are not simulations where a non-disabled person 'tried on' using a wheelchair or walker or other assistive device or where a non-disabled person experiences temporary 'fake' blindness or deafness or 'manufactured' confusion or sensory overload. Disability Studies research advises us that these types of experiences minimize the complexities of disabled lives and give a false sense of ease and tragedy, both of which are inaccurate and unhelpful as frames of reference for non-disabled allies and advocates. Rather, these scenarios **offer interactive experiences with disabled characters who are negotiating the consequences of ableist assumptions** in a variety of everyday encounters.

The scenarios include encounters taken from actual reported experiences from disabled people who we consulted in the design of this workshop, and in the design of the scenarios themselves. We have taken seriously the mantra: **Nothing about us without us**. This means that disabled people MUST be consulted when their lives and the quality of their lives come under scrutiny for any purpose. As a facilitator, it is your responsibility to **be aware of ableism and to model inclusion and anti-ableism in your conduct** as a facilitator.

The following pages include resources and suggestions to support you in your role as a facilitator.

You can download and use the simulations as an open resource, available through the eCampus Ontario website (Ontario Commons License (Version 1.0) (ecampusontario.ca). Simulations can be downloaded for use on VR goggles (use the Unity File) or on a PC (use the PC version).

You can make the user guide available to students/ participants by downloading the user guide from the eCampus Ontario website or this link: https://sites.google.com/view/user-guide-for-vr-simulations/home

Thank you for joining us in this adventure.

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KEY WORDS

Disablism has been defined as "discriminatory, oppressive or abusive behavior arising from the belief that disabled people are inferior to others" (Miller et. al., 2004, p. 9). Disablism thus includes widespread belief systems that devalue disabled lives, as well as a range of resulting practices including schoolyard bullying, the use of disability-related terms as insults, and institutionalization (Campbell, 2009; Withers, 2012). Disablism also, however, underlies less obvious forms of "social oppression involving the social imposition of restrictions of activity on people with impairments and the socially engendered undermining of their psycho-emotional wellbeing" (Thomas, 2006, p. 73). Thus, disablism is also evident in daily struggles to make friends, exclusions from recreational activities, hurtful 'jokes', and structural barriers within higher education. In sum, disablism involves beliefs, processes, and practices that (intentionally or not) serve to harm, exclude, and restrict opportunities for disabled people based on the *negative ontology of disability:* the assumption that disability is an all-encompassing and entirely negative identity, which makes one inferior to non-disabled people (Campbell, 2009). *Disablism* is simply the explicitly discriminatory manifestation of a much more widespread, and far less openly problematized, phenomenon called *ableism*.

Ableism is a

> network of beliefs, processes and practices that produce a particular kind of self and body (the corporeal standard) that is projected as the perfect, species-typical, and therefore essential and fully human. Disability then is cast as a diminished state of being human. (Campbell, 2008, p. 44)

In other words, the discriminatory mistreatment of disabled people (disablism), is a direct result of the devaluation of people who cannot live up to ideals of non-disabled normativity.

It is much harder to identify and extricate ourselves—and our fields—from ableist assumptions and actions, even if we are motivated to do so. This is because ableist

assumptions form the often-unexamined foundations of much disciplinary knowledge, practice, and values the fields have inherited. This conundrum is at the heart of Lyons' (2013) conceptualization of **enlightened ableism**.

In their study of inclusive education, Lyons (2013) highlighted how teachers often explicitly supported disability inclusion, and could clearly articulate its benefits, yet they did not seem able to identify and redress longstanding practices of segregation and exclusion. The author concluded that it is unlikely that inclusion legislation or policy transforms classroom practices. Rather, such top-down changes likely create an enlightened rhetoric that serves to mask the continuation of ableist (and potentially disablist) practices, thus failing to decrease the inclusive education gap. In Lyons' (2013) words: "the rhetoric of enlightened ableism presents a rational, modern, well-informed view of the world, yet allows the continuation of practices that marginalize people with disabilities'' (p. 240). In other words, people can be doing entirely well-meaning work around inclusion and empowerment, and still help to reproduce a world in which disabled people are devalued and excluded because they do not live up to the supremacist, ableist expectations of bodies, minds, and capacities.

NOTE: the above material has been excerpted from Peers, D., Eales, L., and Goodwin, D. (2023). Disablism, Ableism, and Enlightened Ableism in Contemporary Adapted Physical Activity Textbooks: Practising What we Preach? In D. Goodwin and M. Connolly (Eds.), *Reflexivity and Change in Adaptive Physical Activity*, (pp. 34-46). Routledge.

PREPARING TO BEGIN

Thank you for reading the key words section and for committing to understanding the concepts of ableism, disablism and enlightened ableism. People who attend this workshop will be influenced by, and may be engaging in, some or all these attitudes and actions. We accept that all of us--disabled and non-disabled-- have been socialized and educated in an ableist culture and that we will work together to deconstruct this socialization and build better interactional and interpersonal contexts. This workshop is a move in that direction.

As you prepare for the workshop, remember that most people are not deliberately engaging in attitudes and behaviours that are discriminatory and disrespectful. In fact, if they are attending a workshop like this, it may be an indication of a commitment to awareness and change. As the facilitator, you will set the tone. This means that you may need to work through awkward situations with sensitivity, compassion, and calmness. Having this as an anticipatory set before you even begin will help you prepare yourself physically (be rested and be on site early; practice with the headsets, controllers and laptops ahead of time), intellectually (pre-read the relevant content, including the user guide, the PowerPoint slides, and the content of the scenarios), and emotionally (enter the space with a non-judgmental and open mind as well as a calm and receptive demeanor).

PRACTICAL MATTERS AND LOGISTICS

Know the space/facility in which the workshop will be held. Know how to get there and arrive early. Ensure that the headsets, controllers and laptops are there, turned on, connected to whatever system the facility uses. If possible, have an educational technology or a VR specialist available to be at the workshop with you and meet with that person ahead of time to work out the presentation and instructional order and responsibilities. If possible, practice ahead of time on any presentation technology like projectors and computers and screens. Ensure that there is adequate space for participants to engage safely and meaningfully—if the space is too small, if the chairs and tables are not stable or are uncomfortable OR if the space itself is inaccessible, then arrange for a different space, even if this means that you will need more time for planning and implementation. Ensure that there is enough seating to match the numbers attending the workshop. Ensure that the ventilation and lighting work and do not cause any learning or attentional distractions. Each participant should have a printed copy of the user guide and PowerPoint slides OR have access to an electronic copy of both. Work with the facility personnel to have food and beverages available; have water available for hydration.

THE PEOPLE

You should be aware of how many people will be attending the workshop and have some information on the background or profiles of the participants. Information like age, educational or professional background, previous experience with VR or other digital or technological learning, present employment status and position, and motivation for attending the workshop will be helpful for the facilitator for planning instructional, feedback, discussion, interactive, and reflection strategies. Inform your participants ahead of time about what to expect in a general way and how much time they will be spending at the workshop. This will give them an anticipatory set. If you cannot get this information ahead of time, organize the workshop agenda so that you can get most of the information during an introduction round. Take notes so you can remember names and relevant information. If you cannot give the participants information about what to expect or how long the workshop will take ahead of time, provide this information as soon as possible after your introduction round. If your workshop is embedded in a class setting, be sure to liaise with the course instructor well ahead of time so that you can work together to have a relevant, timely and meaningful experience for the students in the class.

THE WORKSHOP ITSELF

NOTE: unless there is a good reason for waiting, start on time. Timeliness is a form of respect. Likewise, end on time. If you feel you are running behind, move elements around or remove them from the agenda so you can finish on time.

Introductions

Introduce yourself and give some background that will allow the participants to relax and realize they are being facilitated by someone who has experience, has prepared, and who is excited about being with them in this important learning experience.

Introduction Round

Ask participants to introduce themselves, give some relevant self-selected background information and what motivated them to attend the workshop.

Ground Rules or Learning Community Agreements

Ask participants to assist you in establishing agreements about how you will conduct yourselves while you are together in the workshop, e.g., cell phones off, no interrupting, bio breaks when you need them (no permission needed… they are all adults), let us know ahead of time if you need to leave early, respectful interactions, and so forth.

Fair Warnings

Let participants know that there can be adverse reactions to using VR and describe what some of these may be (e.g., nausea, dizziness, disorientation, off balance

sensation). Make sure they know that they can stop when they want to and know how to stop.

The PowerPoint Slides

Use the PowerPoint slides designed to accompany the workshop and let the participants know that the structure and pace of the workshop will be guided by the slides.

The Materials

Have the participants become familiar with the headsets, the controllers, and the laptops/keyboards/mouses. Use demonstrations, give them practice time, and allow for Q & A. Participants with little or no experience with VR or gaming, or participants who are managing processing complexities will likely be overwhelmed by the volume of information there is to process, especially getting the headset on so that it is comfortable and using the controller so that they are able to navigate within the VR environment. If participants wear glasses, they will need to explore and experiment to find the best way for them to fit their glasses into the headset. If participants are managing any balance or vertigo complexities, they will need breaks or they will need to use the laptop set up. Likewise, participants who are managing any fine motor or tactile complexities will also need breaks, or physical support (someone to assist them in putting their fingers/thumbs on the correct parts of the controller) or will need to use the laptop set up. Get a feel for peoples' needs and comfort levels before you begin demonstration and narration. Go through the User Guide together and match the images in the user guide with the controller and the head set and the laptop set up. Also, before activating the VR environment, go through the images in the User Guide to provide an anticipatory set. There is also a video embedded in the PowerPoint Slides that will assist in preparing participants for the VR environment.

Demonstration and Narration

To demonstrate HOW, that is, how to put on the headset, how to use the controller, how to do the set up before they start the scenarios, and how to use the laptop to do all that if they are not comfortable using the headsets and controllers, try the following:

A) Fishbowl—ask a participant who is comfortable doing so to be the 'model' while you narrate the sequence of actions that participants will take to put on the head set, work the controllers, and set up their virtual space prior to engaging with the scenarios. You should know what the model participant will see on their Virtual screens so you can talk them through it. The other participants observe the model participant while they do their set up and start. This is a form of proximal learning based in a master class format—one person does the desired learning task, receiving ongoing instruction and feedback, the other learners observe, realizing that they are in the same proximal learning zone as their classmate and that they are in a similar position as learners, so the task being modeled is also in their zone of learning. It is rehearsal by proxy and can be quite effective for novel tasks and group-based instruction.

B) Narration—the whole group does the headsets on, controllers activated, and VR space set up together while you narrate each step, making sure that you know what they will see on their screens so you can talk them through it step by step.

C) Fishbowl followed by narration—this will likely be the most effective since there will be proxy rehearsal and then a whole group narrated sequence of events.

D) Buddy System—if you have participants with experience in VR or gaming and are comfortable with being a mini-mentor to another participant or participants, then consider organizing partners or trios so that the more

experienced person guides their group mates or classmates through the 'get acquainted with the materials and VR environment' experience. This will depend on your prior knowledge of the participants and on your comfort with managing another layer of organization in the set-up stages of the workshop. Buddy systems work well with larger classes and with 18–25-year-old age groups who enjoy working with peers and 'know each other's language'.

The Scenarios

The VR scenarios have been organized progressively with increasing use of the controller as the participant moves from one scenario to the next. If the participant is using the laptop set up, there will be increased use of the keyboard and mouse as the participant works through each scenario. Read the User Guide to get background on each scenario and what the participants can expect when they enter these environments. The PowerPoint slides also have information about each scenario. The first scenario is conversation based and has sound and visual experiences with use of the controller to access options and minimal use of the controller to identify accessibility problems. The second scenario is conversation based and has sound and visual experiences and a little more engagement with the controller in accessing options and minimal use of the controller to identify accessibility problems. The third scenario is a parking services scenario and involves conversation, sound and visual experiences, and more use of the controller to navigate choices and options, and to identify accessibility problems within the environment. The fourth scenario is a security services scenario and involves conversation, sound and visual experiences, and more use of the controller to navigate choices and options, and to identify accessibility problems within the environment.

Debriefing

The PowerPoint slides have questions that can guide the debriefing. You may debrief after each scenario as a whole group or on an individual basis since people will go through the scenarios at their own pace. OR debrief as a whole group after the first scenario and then as a whole group again once everyone has finished all the scenarios, with individual check ins as necessary after each scenario. Set up a signal with your participants so they can raise their hand or use another recognizable gesture to get your attention for a debrief or a question or comment.

Debriefing allows participants to revisit the experience guided by prompts offered by the facilitator. As mentioned already, the slides have debriefing prompts associated with both the process and the content. It is important to get feedback from your participants on both the VR environment and the set up to get there AND the content of the scenarios and how they interacted with that content using the VR environment.

In addition to the slide-based prompts, you might want to ask:

- What were some of your emotional responses to the content? To the process?
- What aspects of the content/process made you uncomfortable?
- What aspects of the content/process made you think differently about disabled people? About accessibility?
- What other questions do you have about the content that you would like answered?
- Were the scenarios believable? What features of the scenarios contributed to their believability? What detracted from their believability?
- How likely are you to engage in this kind of learning again?
- What could be done differently to improve your experience?

Reflection On Action/Reflection In Action

Reflection is a process of mindful revisiting of an experience and examining one's responses and insights in ways that allow for awareness-based choices about future action. Reflection On one's actions leads to reflection in action in future settings. Research on reflection suggests that when people reflect on their responses and actions, it is more likely that they will 'do the right thing' in the moment in future action.

Reflection on the scenarios allows the participants to become more aware of their own ableist assumptions and to begin the process of deconstructing those assumptions. Prompts for reflection might include:

- What assumptions have you been made aware of and what alternatives can you now consider?
- What actions might you now consider taking that you had not thought about before?
- What can you do in your everyday life to address ableism?
- What can you do in your everyday life to improve attitudes and actions about inclusion?

Wrapping up

Ensure that your participants have access to ways to offer feedback on the workshop. There is a post-pre activity built into the workshop that allows participants to complete a series of questions that can guide reflection and awareness. Build this into the agenda of the workshop so participants know how to do the survey and how to submit it.

Closure

The user guide contains instructions for students/ participants on how to put VR equipment back into the case.

Thank the participants and ask each participant to offer an insight or a take-away before everyone leaves. Provide your contact information so they can get in touch with you for follow-up.

APPENDIX A

Definition of Virtual Reality

Virtual Reality (VR) is a new kind of human-computer interaction that offers users various experiences that mimic the real world or create an entirely new one (Wang et al., 2022). Initially, this technology was part of the human imagination. For example, in the 1930s, Stanley G. Weinbaum (2012) described a magical experience of entering another world by putting on special glasses in his science fiction called Pygmalion's Spectacles. That description is believed to be the earliest novel description of virtual reality with auditory, visual, tactile, and other senses. Then, until the 20th century, it became a reality. After years of development, VR provides a wide range of potential applications in various industries, including Education, healthcare, retail, and gaming (Wang et al., 2022).

In the following section, we will explore the history of VR, its origin, and how it has evolved over the years.

History of Virtual Reality

The origins of VR can be traced back to the early 19th century when Charles Wheatstone invented the stereoscope. People could view two different images through a pair of lenses in front of their eyes using this device. The human brain would then process and combine these images to create a three-dimensional appearance in the head. Although this device was not considered modern "virtual reality," it laid its foundation.

In the middle of the 1950s, Morton Heilig (1962), a cinematographer, created the first virtual reality machine called the *Sensorama*. It is an arcade-style theatre cabinet

that would stimulate all the senses (not just sight and sound): three-dimensional display, stereo speakers, fans, fragrance generators and a vibrating seat to simulate different sensations. The *Sensorama* was used to create short films that could transport the audience to various places and situations.

Morton Heilig (Virtual Reality Society, 2017) also invented the first head-mounted display (HMD) example in the 1960s. This headset provided stereoscopic 3D and wide vision with stereo sound. However, it was non-interactive, without any motion tracking at that time.

After Heilig's head-mounted display (HMD) intention, the first motion-tracking HMD was called *Headsight*. The military used it for viewing dangerous situations. Headsight is the headset that is close to **modern VR** (Wang et al., 2022).

In the 1960s, Ivan Sutherland, a computer scientist, created an ultimate display. This device allowed the wearer to view computer-generated images in 3D. The HMD was a significant breakthrough in virtual reality. It allowed users to be fully immersed in a simulated environment and provided the ability to interact with objects in the virtual world.

In the 1970s, Myron Krueger developed a " Videoplace " system that used cameras and projectors to create interactive environments. The system allowed users to interact with virtual objects, creating the first interactive virtual reality experience.

The 1980s was a significant decade for virtual reality as it was the birth of a new industry. The term "virtual reality" was coined by Jaron Lanier, who founded the company Visual Programming Lab (VPL) in 1984. Officially, the name "virtual reality" was born from here. Soon, VPL Research created the first virtual reality goggles at an expensive price ($9400) called the "EyePhone," which was used for medical, military, and commercial applications (Virtual Reality Society, 2017). In 1985, NASA stepped into the virtual reality field and developed the Virtual Environment Workstation (VIEW), which was used to simulate spacewalks. Therefore, the astronauts could practice procedures in a simulated environment before going to space via VIEW. Later, in 1987, the first VR conference was held in California,

bringing together researchers and enthusiasts worldwide. The conference was a significant milestone in VR as it began a community of researchers and developers dedicated to advancing the technology.

The 1990s was a significant advancement in VR technology with the introduction of more powerful computers and graphics cards. The physical rise of computers led to more immersive virtual reality experiences. In 1991, the first commercial virtual reality game, "Virtuality," was released. The game was played on an arcade machine, using a head-mounted display and handheld controllers (Virtual Reality Society, 2017).

The 2000s was the rise of the internet and social media, significantly impacting the development of VR. As a result, VR technology slowly evolved with new hardware, software, and application advancements.

The 2010s saw a resurgence of interest in VR with the release of new virtual reality hardware such as the Oculus Rift and PlayStation VR. These devices offered higher-resolution displays, faster refresh rates, and more accurate motion tracking, allowing for more immersive experiences. In 2012, Palmer Luckey founded Oculus VR, which Facebook later acquired in 2014. Oculus VR released the Oculus Rift (Virtual reality, 2023), a virtual reality headset for gaming and entertainment. The release of the Oculus Rift marked a significant milestone in VR as it was the first high-quality VR headset that was affordable for consumers. In 2016, Google released Daydream (Google daydream, 2023), a VR platform for mobile devices. Daydream allowed users to experience virtual reality on their smartphones, making VR more accessible to the general public. Because of the accessibility of VR to the general public, VR in education, healthcare, and training emerged. For example, VR was used to simulate medical procedures, train military personnel, and educate students in new and innovative ways.

In the 2020s, VR technology has significantly advanced, with new hardware, software, and applications: one of the most significant developments in VR is the release of standalone VR headsets, self-contained devices without a personal

computer or console to operate. In addition, they offer high-quality graphics and motion tracking, making VR a popular choice for gaming and entertainment (Virtual reality, 2023). Furthermore, the COVID-19 pandemic increased demand for VR technology as people sought new ways to connect and engage with others. VR was used for virtual conferences, concerts, and social events, allowing people to stay connected while practicing social distancing.

In summary, VR has come a long way since its origins in the 19th century. From the stereoscope to the various brands of VR headsets, VR has undergone significant advancements in hardware, software, and applications. It has been used for gaming, entertainment, education, healthcare, and training and is expected to continue to evolve and be used in new and innovative ways. VR has the potential to revolutionize the way we live, work, and interact with each other, and it will be exciting to see where it goes from here (Virtual reality applications, 2023).

Benefits of Virtual Reality applications in Education

VR offers a multitude of benefits in various domains. One of the main advantages of VR is that it promotes perspective-taking with a strong emphasis on emotional engagement (Kazlauskaite, 2022), creating a sense of immersion and presence (Wang et al., 2017). Additionally, VR offers representation and reflexive engagement opportunities (Kazlauskaite, 2022), helping students translate concepts into practice (Lanzieri et al., 2021). Furthermore, VR enhances cultural learning and raises positive attitudes toward the target culture, making it a valuable tool for language education (Shih, 2015; Zhang et al., 2016; Chen, 2018). Moreover, VR facilitates collaborative exchange, enabling users to interact with others in a virtual space (Dooly & Sadler, 2016; Levak & Son, 2017). Finally, it can analyze metacognitive problem-solving skills, providing a unique opportunity to assess and examine cognitive abilities (Lum et al., 2020). Overall, VR is a powerful tool that can be used in many different contexts, offering unique benefits compared with other technologies.

Limitations of Virtual Reality applications

While VR has many benefits, it also has limitations, especially when simulating disabilities. There is a debate about how effective simulations can be as they cannot accurately depict the reality of living with a disability and often reinforce stereotypes or binary constructions of disabled and able-bodied. However, in the case of VR simulations that aim to increase disability awareness, the focus is on engaging users in interactions with disabled people, centring the person with disabilities as the expert on their own experiences. Each scenario is based on real-life experiences or things that have occurred in the lives of the community and team members. Using person-first and identity-first language acknowledges individual preferences and recognizes that some may not identify with the language of disability or feel it applies to them.

Additionally, there is a concern about social desirability bias or providing socially appropriate responses. Therefore, users are encouraged to explore all options, including those they would not usually choose, to understand the scenarios better. While VR has limitations, its potential for creating empathy and understanding is worth exploring.

APPENDIX B

Reading List

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Project Partners:

NIAGARA COLLEGE CANADA, BROCK UNIVERSITY AND XPERTVR

Project Funders

This project is made possible with funding by the Government of Ontario and through eCampusOntario's support of the Virtual Learning Strategy. To learn more about the Virtual Learning Strategy visit: https://vls.ecampusontario.ca.

Funded by the Government of Ontario and eCampusOntario.