

Equity, Diversity and Inclusion VR Training Tool



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Addressing Client Needs and Design Criteria

Needs [priority]	Criteria
The experience is interactive [3]	Level of Interactivity
The experience focuses on or more of these issues: race, gender, creed, religion, disability, others [4]	Relatability to marginalized groups
The experience fosters diversity and inclusion [5]	Effectiveness of fostering diversity and inclusion
The experience seeks to elicit empathy from those who do not face the issues associated with the subject matter of the experience [5]	Effectiveness of empathy elicitation
The experience imparts on the user another's POV [4]	Change in POV
The experience conveys to the user what it is like to be different from everyone else. [3]	Conveyance of otherness
The experience incorporates reflection in some way. [3]	Opportunities for reflection
The experience is immersive. [3]	Level of immersion
The experience has a low barrier to entry (ease of use; adaptation to VR). [4]	Ease of use
The experience is engaging. [3]	Level of user engagement
The experience is considerate of those with various disabilities. [1]	Accessibility

“ A need exists for an immersive, interactive, engaging, and accessible virtual reality experience that fosters diversity and inclusion by imparting another's point of view on users, allowing for them to accurately imagine and reflect on what it is like to be different from everyone else. ”

Problem Statement

Benchmarking → Comparison with competitors

Existing products

- Axon Virtual Reality Empathy Training
- Canadian Centre for Diversity and Inclusion (CCDI)'s eLearning Module
- Equal Reality

Elements to be considered

- Different options for interactions and dialogues
- Address the challenges of particular groups
- Shorter experiences are more engaging
- Consideration of the hearing impaired
- Complete virtual reality world
- Practical scenarios

Potential concepts → Brainstorming

Recollection Quiz – ADHD

- Conversation conveying important information
- Exaggerated environmental distractions
- Memory recollection quiz

A Day in the Life - Anxiety

- Follow character through their average day
- Everyday tasks

Task Completion – ADHD

- Complete as many tasks as possible within time limit
- Exaggerated distractions to prevent task completion

Our Chosen Concept

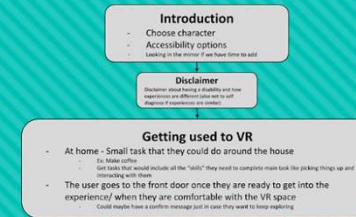
A Day at Work

- Attempt to complete general everyday work tasks
- Exaggerated symptom analogues hinder task completion
 - Specific to the invisible disability
- Inner Monologue
 - Move the experience forward
 - Guide the user's emotional education (tell what can't be seen)
- Character Selection
- Reflection Questions

Prototype I → First try

Storyline (Analytical prototype)

- Sequence of events and tasks
- Two ≈5 minutes experiences
 - Attention deficit hyperactivity disorder (ADHD) and Generalized Anxiety Disorder (GAD)
 - Same structure



Main Experience Anxiety

Main characteristics

- Inner monologue: constant overthinking of the tasks at hand more specific

Speaking to supervisor

Focus on social anxiety
Overthinking how message with customer user thinking about what the supervisor is saying
Does a lot of things that the user should consider

Procrastination of tasks

Shorter tasks are given specifically as a way of procrastinating (perfectionist) as a way to keep busy and avoid the important more stressful task
Clean/organize desk

- Sort through documents
- Create list of things that need to be done
- Read monologue and get stuck in the overthinking to avoid tasks that the supervisor mentioned/assigned when they have to do them

Pick what to put in the presentation

Difficulty making decisions → sorting through documents
User monologue would almost create a pros and cons list and would have trouble making what to include. Monitor when their choice decision once they have made their decision
Do they do the paper need and be able to make decisions and would just be looking to the user monologue and then they might make a different choice

Placing things on the poster

Hands on task → finally shaking
The user would stop overthinking or try to do to avoid things and not be able to complete task. Finally the computer clearing

Checks on car

They hear a car horn and feel that they need to check
They need to check on their car to make sure it's locked or they get in to look and see if they have any things to do to be in a complete state over to empty the surrounding space

Asking coworker

Asking opinions of other for reassurance and asking them to make decision
The user would ask another coworker what they think and would ask them to make a decision or that they don't want to make a decision
Coworker would give an answer to the user

Go back to office and look at the poster

Make changes
User would receive the paper and change what the supervisor said

Rethinking and redoing

Second guessing placement of things on the board
The user would be over thinking important or less important about the work tasks and would not take the supervisor's task to be another

Overthinking and chaining effect

Very compulsive and constantly thinking of everything
(Quality effect)
"What if my boss doesn't like it? What if it's not done for me? What if I can't do anything? What if I can't do anything? What if I can't do anything?"

Check in with supervisor

User has to show the supervisor their work
Supervisor would be happy that the user has done their work
User monologue would include constant questioning and worrying about tasks that the supervisor is assigning
User would be happy that the supervisor is assigning more tasks but they don't get enough done when the supervisor is assigning

Main Experience ADHD

Main characteristics

- FILO tasks
- Distractions: Inner monologue, Constant auditory and visual distractions

Having to find a specific paper

Random task to represent not being able to find things
User would be overthinking about what they need to do and would need to be completed (constant inner interaction with supervisor)

Reading a paper or report

Would have to try to concentrate on the report
Constant distraction and other tasks will come to mind and need to be completed that would distract the user
This task would NOT get finished. User continues to be paper and would be overthinking about the paper and the user would not be able to read it because of the distractions and the time

Random task based on report

Certain word from the paper starts another task
This task would depend on the report type

Gets coffee

User would hear the sound of coffee machine
Based on the supervisor used and the other tasks would use a computer to make sure the user is done

Update a spreadsheet

Task based of conversation with coworker at coffee
User would be overthinking about the spreadsheet and would not be able to work on it
Working team for no computer it could just be a checking a paper and getting it done

Find misplaced coffee cup

User must find the coffee that they misplaced
User would be overthinking about the coffee and would not be able to find it
User would be overthinking about the coffee and would not be able to find it
User would be overthinking about the coffee and would not be able to find it

Give coworker a paper

What the coworker asked user to do at the coffee machine (DIRECTLY)
User would be overthinking about the paper and would not be able to give it to the coworker
RANDOM TASK WOULD BE ASKED AT SOME POINT DURING THE TASK

Task sitting down at desk

GO BACK TO THE MAIN TASK OF WORKING AND TRYING TO FIND THE IMPORTANT INFORMATION

Stand up

User "gets fidgety" so has to move
The user would only have to stand up after having the sound and would be overthinking about it

Check on the mail

They think of checking the mail after realizing they need to be done up
This would then need to be the last place before they notice the time

Notices time

Time distortion
User at desk and not realizing it's time and not realizing it's time
This would need to happen when the clock says the time is up. And realize that they haven't completed the task and then they get back to work

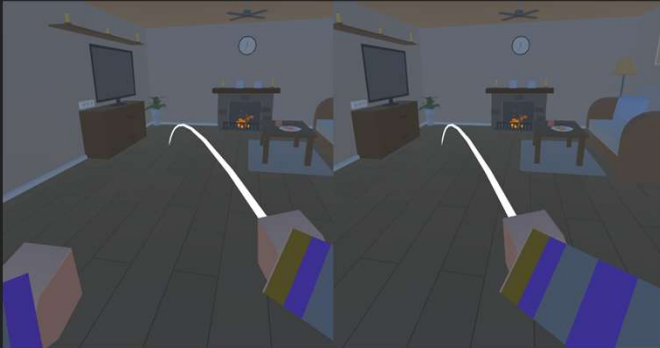
Check in with supervisor

Supervisor comes to check in
Supervisor would be happy that the user has done their work
User would be overthinking about the supervisor's task and would not be able to do it
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User would be overthinking about the supervisor's task and would not be able to do it

Reflection

- Might be partly different due to different disabilities
- Conclusion of our experience and the user would gain the disability

Prototype I → First try



Working in Unity (physical prototype)

- Adding base elements into the space
 - Framework
 - Baseline
 - First environment
- Initial prototype testing
- Allowed us to get used to using unity

- Experience must reflect the entire invisible disability
 - Disclaimer
 - Research about invisible disabilities and get feedback from people with ADHD and GAD
- Reflection should be “right answer resistant”
 - The reflection will be more open ended and will not be black or white
- Concerns about short timeline
 - Focus on ADHD

- ✓ Common invisible disabilities
- ✓ Good main concept
- ✓ Eliminating pre-existing bias with not knowing the disability
- ✓ Room to expand and develop

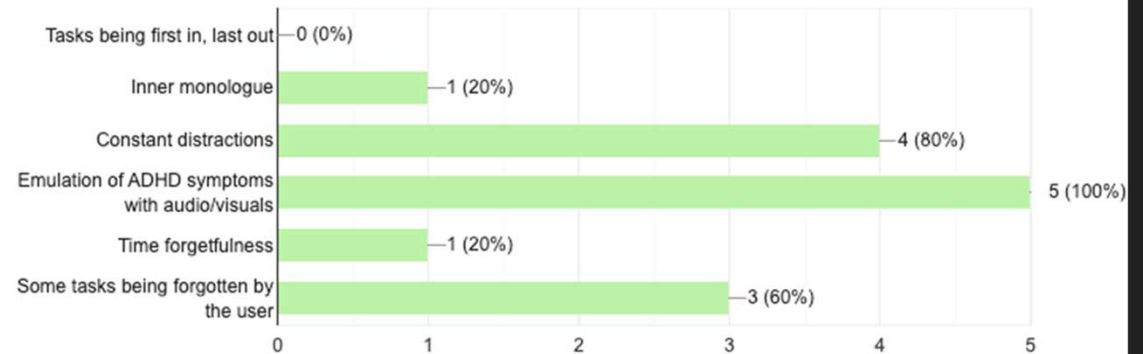
Feedback from client

Feedback from potential users and clients

- Reflection element is essential
- Include some questions or suggestions about actions
- Ideas on how to provide support
- **Emphasize that everyone has different experiences and that not all experiences are included in this simulation**
- Sources for more information

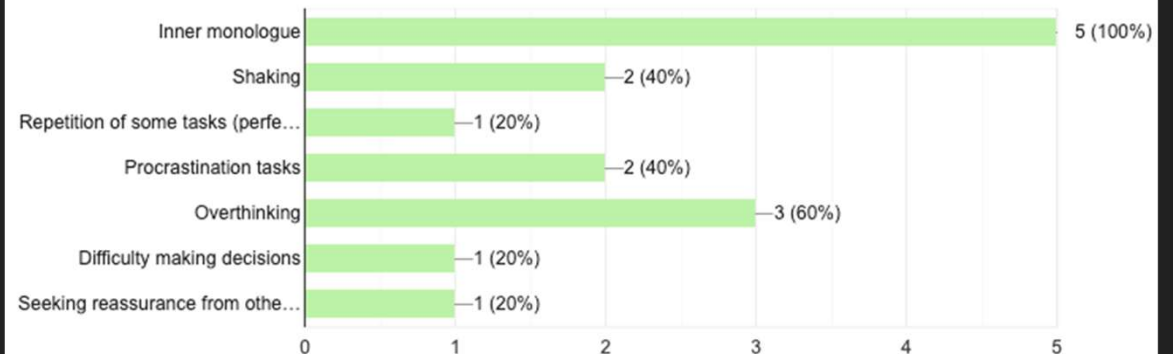
What elements of the ADHD VR experience seem most impactful?

5 responses



What elements of the anxiety VR experience seem most impactful?

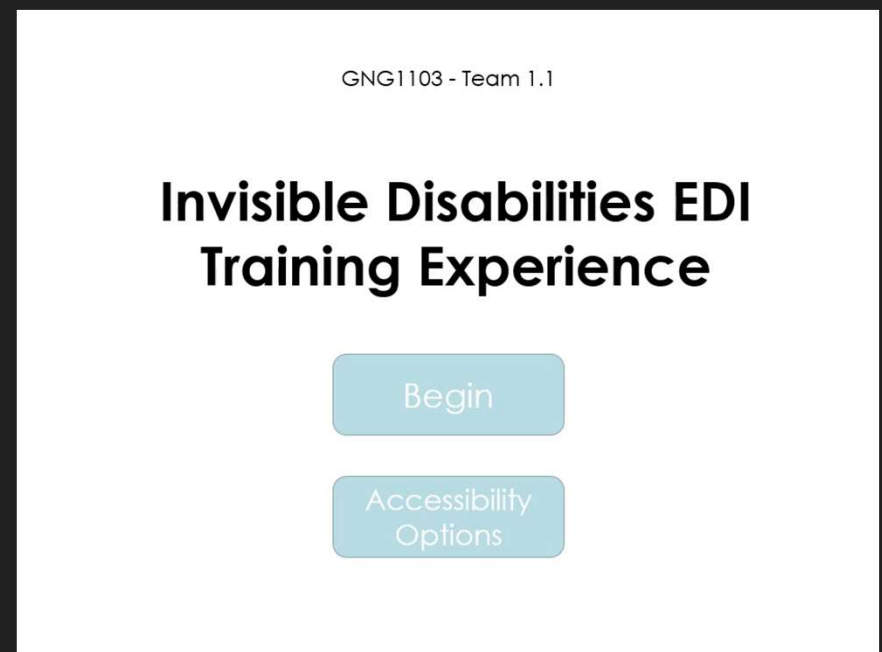
5 responses



Prototype II → Development and background work

Updates and details

- Updated sequence of events and tasks
 - Distractions
 - Refined order
 - Focus on activities representing potential user feedback
- One ADHD experience
- Development of end reflection
- UI designs

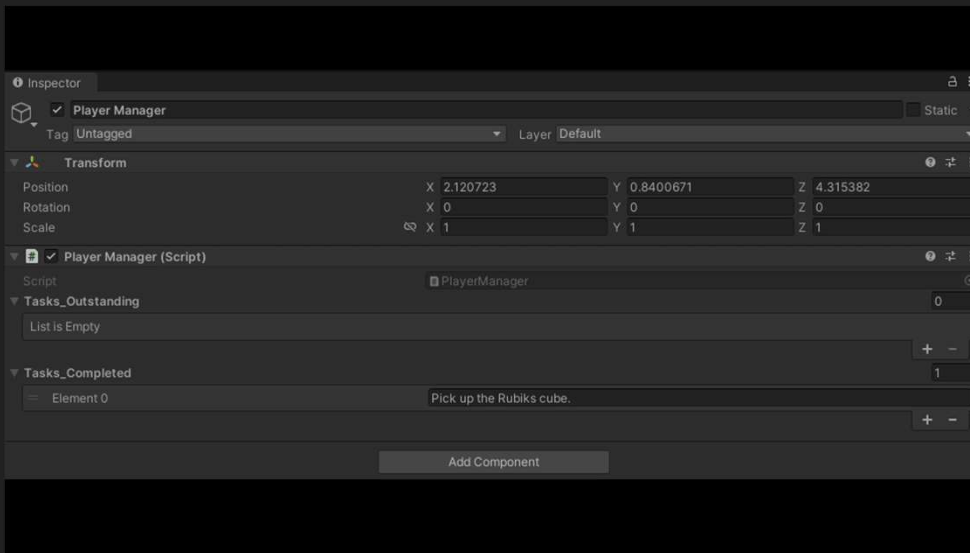


UI designs

Prototype II → Development and background work

Unity and VR

- Users can interact with object
 - ex: open doors, grab objects
- Task functionality
 - Assign, perform, complete
- Animation diagrams



Task functionality on Unity and animation diagrams

Prototype III (NOW) → Coming to life in VR

- Added basics of tasks to unity
- Ensure that all the tasks work
- Inner monologue script
- Record inner monologue and add in Unity
- Add inner monologue script for subtitles option
- Get feedback from users on ways to improve the final VR experience



Experience sequence

Introduction → Option selection

- Accessibility options
 - Subtitles
 - Voiceover
 - Volume
- Choose character
- Disclaimer

GNG1103 - Team 1.1

Invisible Disabilities EDI Training Experience

Begin

Accessibility Options

Accessibility Option

Subtitles: none small font
 medium font large font

Voiceover: Yes No

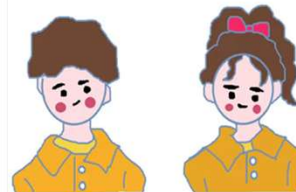
Volume:

Background:

Noise and music

Back

Character 1- Name



Switch characters

Enter experience

Disclaimer

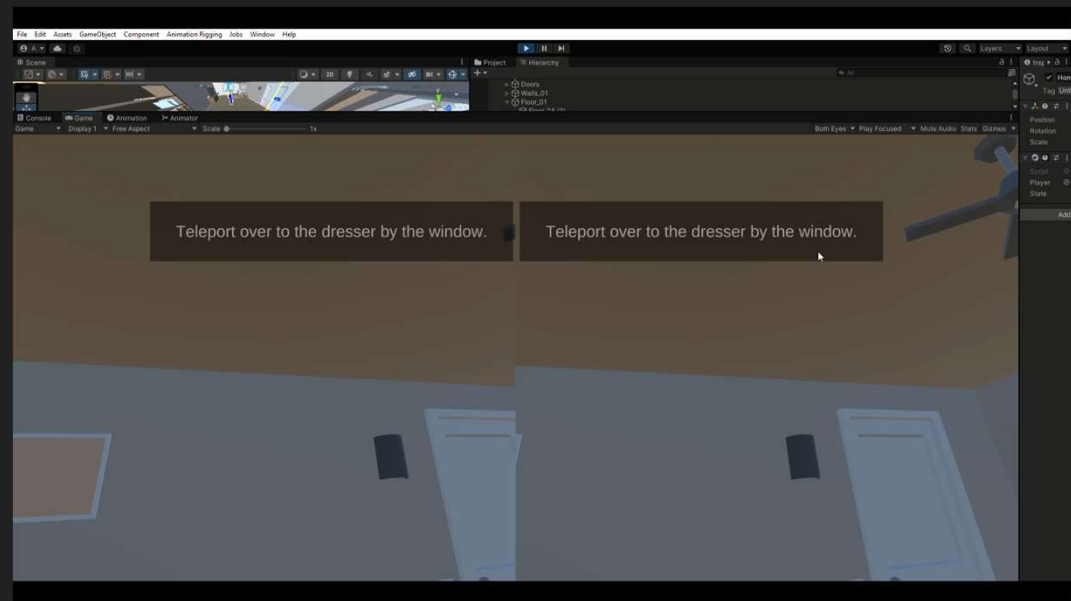
Invisible disabilities, especially those relating to mental illnesses, can present in many ways, and these experiences can vary from person to person. The experiences presented in this training tool present the developers' interpretations (and in some cases personal experiences with) some common symptoms at various invisibilities.

This tool should not be seen as an all encompassing depiction of the invisible disabilities converged.

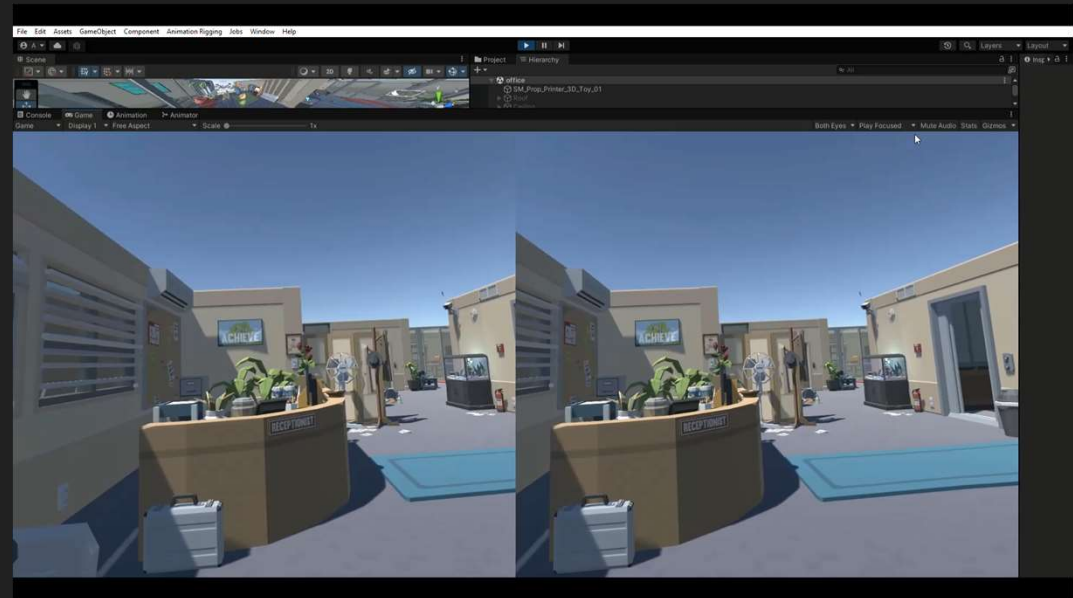
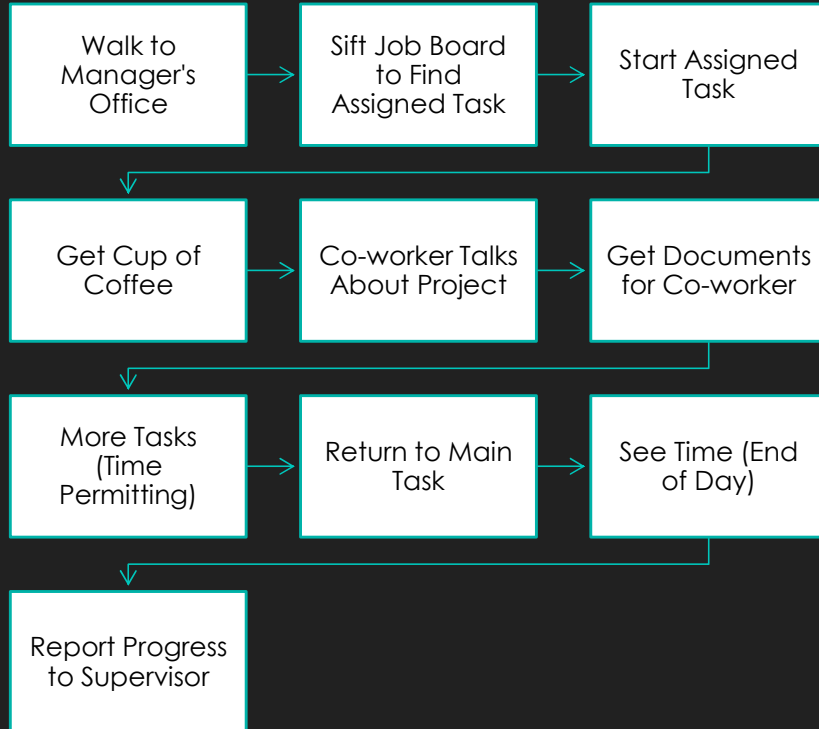
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Home Scene → Getting used to VR

- Allows user to get familiar with the concept of VR
 - Object interaction
- User can move to the front door once they are comfortable with VR or if they want to skip



Office Scene → Completing tasks



Distractions → Implementation of symptoms

Inner monologue

- Demonstrates the constant stream of thoughts in the mind of a person with ADHD



Visual

- Flashing light
- Excessive movement from coworkers in peripheral vision



Auditory

- Typical noises around an office but exaggerated
- The changes in noise level will cause the user to be distracted



Conclusion → Reflection and resources

Sample Guided Reflection Questions:

- *“Which of the following invisibilities do you think you were experiencing?”. Once the user answers, the text that appears will say “You were following the life of someone with ADHD”*
- *“You took _ minutes and _ seconds to complete the experience. During this time, you completed _ tasks. How different do you think your experience would have been without the constant distractions?”*
- *“How did it feel when you had to check in with the supervisor?”*
- *“How could you be more supportive of those who have ADHD?”*

Guided reflection

The purpose of this module is to give you time to reflect on the experience; while your responses are not recorded, we hope that this module allows you to think more deeply on the impact of invisible disabilities.

Continue

Resources

Mental health crisis line : (613) 722-6914
1-866-996-0991

www.crisisline.ca

uOttawa resources: www2.uottawa.ca/campus-life/health-wellness
walk-in counselling at 100 Marie-Curie, 4th Floor

To learn more about ADHD: www.cheo.on.ca/en/resources-and-support/adhd.aspx

Continue

Lessons learned and room for expansion

Lessons learned

- Prioritization when there are time constraints
- Combination of different views and opinions creates stronger ideas

Room for expansion

- Expansion for other invisible disabilities
 - ex: anxiety