Empathy Tool Manual

Hearing Impairment Simulator

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Welcome

to the Hearing Impairment Simulator Empathy Tool Manual

Video Demo [1]

Manufacturer Manual [2]

Please carefully read this **Empathy Tool Manual** before using the assisted tools or simulators.

This manual is designed to help you understand the challenges of individuals facing hearing loss through the use of the Hearing Impairment Simulator. Please note that you can access manufacturer's user manual via the QR codes above.

The Empathy Library is exhibited within the Material Resource Centre, Room V510, 5/F, Jockey Club Innovation Tower, The Hong Kong Polytechnic University.

Visit **http://empathylibrary.design** or scan the QR codes on the last page of this manual to access the digital version and for more resources.

Warning:

The Hearing Impairment Simulator is an educational tool intended to simulate various aspects of hearing loss. It is designed to help students empathise with individuals experiencing hearing impairments and enhance their understanding of the challenges faced by those with hearing loss. While the simulator provides a simulated experience, it may not fully replicate the exact auditory conditions of individuals with hearing impairments. Exercise caution and create a safe environment when using the simulator to prevent accidents, injuries, or discomfort. Avoid engaging in activities that may pose risks or require capabilities beyond the simulator's simulation.

Disclaimer:

The use of empathy tools does not equal the full experiences of having a disability. It is best to aim to engage with your target audience, using the tools to prepare better. The Hearing Impairment Simulation and Empathy Tools Manuals are not substitutes for professional medical advice or diagnosis. Consult a qualified professional regarding diagnosis concerns. Use the tool responsibly, acknowledging its limitations and potential risks. The School of Design, the Material Resource Centre, and the creators of this simulator and manual are not liable for any injuries, damages, or misuse of the simulator.

Citation:

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Contents

1. Description of the Simulator

What disability or impairment does this simulate?

The Empathy Library will have two different models of hearing simulators available for loan. Firstly, a pair of **passive noise-cancelling hearing protection ear muffs**. This product is very simple to use and requires little instruction on use and operation. Adjust the size to fit over your head, slip them over your ears and refer to ***Section 4, Suggested Exercises & Scenarios.***

The second pair are slightly more advanced and offer more simulation modes. The **Geriatric Hearing Impairment Simulator** mimics various types of hearing impairments, including conditions such as:

1. **Tinnitus:** Perception of noise or ringing in the ears without external sound, often associated with age-related hearing loss or exposure to loud noise.
2. **Dementia-related auditory challenges:** Difficulty understanding speech, processing information, or recognising sounds due to cognitive decline in dementia.
3. **General hearing loss:** Reduction in hearing ability across frequencies, impacting communication and daily activities.
4. **High-frequency hearing loss:** Difficulty hearing high-pitched sounds, affecting speech clarity and communication in noisy environments.

These conditions represent different aspects of hearing impairments that individuals may experience, highlighting the importance of designing with empathy and understanding for those with hearing loss.

2. Use & Operation

How to put it on?

The **Hearing Impairment Simulator** includes several parts, and here is a list of all the components to help you out.

- **Hearing impairment controller**
- **Headphones**
- **Headphone cable**
- **2 x AA batteries**
- **Disposable headset cover**

1. Put on the headset, including disposable headset covers maintain proper hygiene.

2 Turn the controller on by using the power switch on the side. A green light will light up when the controller is on.

3 The first **green** mode is standard, which is **'normal'** hearing.

- The volume dial may be adjusted to a comfortable level in this mode.
- The age control dial to the right should be turned all the way to the **'-'** position

2. Use & Operation

How to put it on?

4. Begin the simulation with **Tinnitus** mode.
   - Press the selection button until the **red** Tinnitus indicator light is on.
   - Try the suggested activities in ***section 4*** while the Tinnitus 'ringing' occurs in the ears.
   - The Tinnitus 'ringing' tone and volume cannot be adjusted.

5. The second condition is the **Dementia** mode.
   - Press the selection button until the **blue** indicator light turns on.
   - The sound will be unintelligible and confusing. Turn the volume dial to increase or decrease the volume of the sound.

6 The third condition is **General Hearing Loss** mode.

- Press the selection button until the **green** indicator light turns on.
- Turn the volume dial **clockwise to the '+' position**.
- Try some of the activities in ***section 4*** while gradually turning the volume control dial toward the **'-' position for slow hearing loss**.

7 The fourth condition is the **High Frequency Loss** mode.

- Press the selection button until the **green** indicator light turns on.
- Set the volume dial to a comfortable level.
- Turn the **age control** dial to the **'-'** position.
- Try some of the activities in ***section 4*** while gradually turning the age control dial to the **'+'** position.

3. DOs & DON'Ts

How to embrace and avoid?

DOs

- **DO** use this simulator after reading through this empathy tool manual
  DO ensure that the headset fits properly and comfortably over your ears before starting any activities.
- **DO** follow proper hand hygiene practices before and after use, including washing your hands and wiping the headset to maintain cleanliness and prevent the spread of germs.
- **DO** consult with individuals who have firsthand experience with hearing impairment to better understand their needs and challenges.
- **DO** start with simple tasks and gradually progress to more complex activities to get a better understanding of the user experience.
- **DO** communicate and collaborate with other students or instructors to share insights and experiences gained from using the Hearing Impairment Simulator.
- **DO** handle the headset with care to prevent any damage or wear that may affect their effectiveness.

DON'Ts

DON'T use the simulator if you are a person with pre-existing impairments due to age, illness or disability.

DON'T use the simulator if you are a high-risk individual with heart conditions, at risk for having a stroke or seizure, or with neurological or mental illness.

DON'T use the simulator if you suffer from acute illnesses such as a virus, infections and or skin disorders.

DON'T use the simulator if you have any open wounds, cuts, or skin conditions that may be aggravated by wearing them.

DON'T participate in activities that may pose risks or require capabilities beyond the simulator's simulation capabilities.

DON'T use the simulator for activities that require a high level of precision or that could potentially cause harm to yourself or others, for example, driving a car or operating heavy machinery.

DON'T forget to approach the usage of the simulator with empathy and respect for individuals living with hearing loss, focusing on understanding their needs rather than simply mimicking their limitations.

(Photo Credit: Anthony Camerlo on Unsplash)

4. Suggested Exercises & Scenarios

How to build empathy with the users?

1 **Conversation in Noisy Environment:**
Engage in a conversation with a peer while simulating various levels of hearing impairment using the simulator. Choose a noisy environment, such as a café or a busy classroom. Experience the challenges of understanding speech, focusing on specific sounds, and distinguishing voices in a noisy setting. Reflect on how this impacts communication and gather insights for designing inclusive environments.

2 **Phone Communication:**
Attempt to have a phone conversation while wearing the simulator. Adjust the settings to simulate different degrees of hearing loss. Notice the difficulties in understanding speech over the phone, especially when relying solely on auditory cues without visual cues. Consider how technology and user interfaces can be improved to support individuals with hearing loss during phone interactions.

3 **Public Announcement or Lecture:**
Attend a public announcement or lecture while wearing the simulator. Observe how difficult it is to comprehend critical information solely through auditory means, especially in large or acoustically challenging spaces. Identify potential design solutions or adaptations that can enhance accessibility for individuals with hearing impairments in public settings.

4 **Group Discussion:**
Participate in a group discussion or brainstorming session while simulating different levels of hearing impairment. Observe the challenges of following multiple conversations, understanding various voices, and capturing important ideas. Reflect on strategies to facilitate inclusive group interactions and ensure equal participation for individuals with hearing impairments.

5 **Media Consumption:**

Watch a video or listen to an audio recording while wearing the simulator. Adjust the settings to simulate different levels of hearing loss. Pay attention to the difficulties in understanding dialogue, music, or other audio elements. Consider how captions, visual cues, or alternative forms of media presentation can enhance the accessibility of audiovisual content.

6 **Environmental Sounds:**

Take a walk in a park, busy street, or other outdoor environments while simulating hearing impairment. Notice the impact on perceiving ambient sounds, such as traffic, bird songs, or announcements. Explore ways to design inclusive urban spaces that consider the auditory experiences and safety of individuals with hearing impairments.

7 **Social Gatherings:**

Attend a social gathering, such as a party or event, while wearing the simulator. Experience the challenges of following conversations, participating in group activities, and feeling included in social interactions. Reflect on ways to create inclusive social environments and design solutions that facilitate communication and engagement for individuals with hearing impairments.

These suggested exercises and scenarios aim to provide you with firsthand experiences of the challenges faced by individuals with hearing impairments in various contexts. By immersing yourself in these scenarios, you will gain valuable insights and inspiration to create more inclusive and empathetic designs.

(Photo Credit: Mark Paton on Unsplash)

5. Designing for Intersectionality by Combining Empathy Tools

How to build empathy with the users?

As design students, it is essential to recognise that the individuals we are designing for may often have more than one impairment or condition. While the simulators provided in this manual offer valuable insights into specific aspects of the user's experience, it is important to remember that real-life situations can be complex and multifaceted.

To deepen your empathetic design methods and create more inclusive, innovative and original solutions, we encourage you to consider using **a combination of empathy tools** together. By combining simulators, such as wearing the **Hearing Impairment Simulator** with the **Aged Simulation Suit**, you can gain a more comprehensive understanding of the challenges faced by individuals with multiple impairments or conditions.

By embracing this holistic approach, you will be better equipped to develop designs that address the diverse needs and experiences of your target users. Remember, empathy is at the core of meaningful design, and by continually expanding your understanding and perspectives, you can create truly inclusive and impactful solutions.

Have you thought about using this simulator along with:

Vision Impairment Simulation Glasses

Aged Simulation Suit

These are just some suggestions; you can get creative and try to create any combination of empathy simulators, including your own DIY simulators.

Reference

1. Reality Works. (2020, June 19). *Product Support - Geriatric Hearing Impairment Simulator* [Video]. YouTube. https://www.youtube.com/watch?v=p1WTJRE2QDY
2. Reality Works. (2019, August). *How do I use the Geriatric Tremor Simulator*. https://www.realityworks.com/wp-content/uploads/2019/08/hearing-impairment-sim-how-do-i-use.pdf?v=69e1aafeccc5

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