

Project Deliverable B - Needs Identification and Problem Statement

GNG1103

Team F1.1

January 30, 2022

Introduction

Hanan Anis, is the head of the School of Engineering Design and Teaching Innovation at the University of Ottawa. She has a particular passion for Equity, Diversity, and Inclusion (EDI) education, and has expressed the need for a library of tools to assist with EDI training at the university. In this endeavour, she has retained the services of GNG 1103.

Virtual Reality (VR) is a set of hardware and software technologies used to place users in new environments. VR has proven in the gaming space that it is capable of placing users into new, immersive and engaging worlds, and is generating buzz in the education sector as a highly effective means of training workers. The client's goal is to develop one or more VR experiences that increase awareness and elicit empathy from people who have had very different experiences.

Client Needs

The client initially submitted a written request describing their expectations, but the project team has also interviewed the client, along with a panel of marginalised individuals who have had negative experiences due to their race, gender, sexual orientation, or creed. Following the interview and a review of the initial written request, the project team has produced the following list describing the client's needs. The needs are grouped into four different categories that express the part of the product to which the need applies. The needs are also scored on a scale from 1 to 5, representing the relative importance of the need (5 being higher, and 1 being lower importance).

ID	Category	Need	Importance
1	EE	The experience fosters diversity and inclusion.	5
2	EE	The experience seeks to elicit empathy from those who do not face the issues associated with the subject matter of the experience.	5
3	EE	The experience imparts on the user another's point of view.	4
4	EE	The experience focuses on one or more of these issues: race, gender, sexual orientation, religion, visible or invisible disability, others.	4
5	EE	The experience conveys to the user what it is like to be different from everyone else.	3
6	EE	The experience incorporates reflection in some way.	3
7	T	The experience takes advantage of VR technology.	5
8	T	The experience is interactive.	3
9	T	The experience is easily accessible to all members of the university (students, staff, professors).	2
10	T	The experience is low-cost.	2
11	UE	The experience is immersive.	3
12	UE	The experience is engaging.	3
13	A	The experience has a low barrier to entry (ease of use; adaptation to VR).	4
14	A	The experience is considerate of those with various intellectual and physical disabilities.	1

Legend for categories: EE: Emotional education, T: Technical, UE: User Experience, A: Accessibility

Table 1: Categorization and Prioritization of Need Statements

Keeping these needs in mind, the project team developed the following problem statement: **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.**

User Benchmarking

The clients never discussed their experience with existing methods of EDI training, nor with VR education. Consequently, the team could not perform user benchmarking in the traditional sense. Instead, the team has benchmarked the experiences described by the interviewed panel in order to provide a framework around which the VR experience can be developed.

A concern that was brought up multiple times by different panellists during the client meeting was that they often received unsolicited advice, and were often underestimated by others due to their differences. It is important not to assume things simply on the way that someone presents themselves as it is not an accurate indicator of the person's abilities.

Instead of assuming that a person who is different is incapable, it would be helpful to simply ask them if they need help and be there to support them. Trying to solve someone's issues is unhelpful and often ignorant. No one knows everything, especially for situations that they have never actually experienced. Moreover, saying that you understand the situation and wrongly comparing different issues dismisses their experience. The different experiences people have had because of their race, religion, disabilities, sexual orientation, etc. are part of their identity. Ignoring these differences, as some people think is helpful, can actually have the opposite effect. Instead, it is important and helpful for people to educate themselves, and for them to know they will never fully understand what marginalized groups have experienced. There are multiple resources available for people to do so and it should not only be the responsibility of the individuals from the marginalized groups.

Further Clarifications

The following is a list of questions and concerns that were not answered at the first client meeting:

- What should the runtime of the experience be?
- How much understanding and sympathy can users get after experiencing this technology, and what is the minimum number of users to judge?
- Should this product be targeting a certain age group?

Conclusion

Through user benchmarking, information from the panel was interpreted to help identify helpful and unhelpful behaviour that the VR experience should focus on based on their shared experiences. Although there are still some further clarifications that will need to be conveyed to the client in future discussions, most of the client needs were identified from the first meeting and from these interpreted needs, a problem statement was formulated. The information gained from empathizing with the client and identifying their needs will be essential as we complete the design thinking process to create a product that satisfies their wishes.