Embosom: Reimagining Home in the Diaspora through a Multi-Sensory VR Art Installation

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Abstract

This paper explores how individuals of Asian diasporic backgrounds perceive and reimagine transitioning between homes through Embosom, a multi-sensory Virtual Reality (VR) installation. The project objective is to awaken emotions, resilient stories, and memories. Insights into participants' emotional feedback are collected through a case study based on an interview questionnaire and survey. Unlike studies focusing on specific locations, this project blurs the lines between reality and the virtual realm, creating a reverie of imaginary remembered spaces. The project combines a physical sculpture with VR visuals and sound to evoke a sense of "home." Participants, while seated on a soft sculpture, are immersed in a VR scene featuring cultural symbols and walls that shimmer with sparkling particles. Enhanced by a subtle soundtrack, the experience of Embosom, fosters a connection with their homeland. The project's methodologies, specifically phenomenology and the psychology of home, have informed its design and content. Insights from interviews and surveys indicate a reduction in anxiety and an increased sense of serenity among participants. The findings indicate that VR visuals were the most impactful element, evoking memories and instilling resilience in immigrants, thus fostering a feeling of home in their host country.

Keywords

Home, Virtual Reality (VR), Multi-sensory, Diaspora, Resilience, Immigration, Narrative immersion, Imagination, Psychology, Emotional impact, Phenomenology

Introduction

Embosom is a multi-sensory VR art installation that explores themes of home, immigration and imagination through the lens of participants from India, China, and Iran who resided in Toronto, Canada, at the time of the study. While acknowledging the inherent diversity within the Asian diaspora, finding a single term that encompasses all participants with perfect accuracy posed a challenge. Therefore, we chose to focus on the shared historical and cultural connections among participants, recognizing that their experiences contribute to the multifaceted narrative of the Asian diaspora as a whole.

Through phenomenological lenses and the psychology of home, our study presents a creative approach to facilitate the participants' transition between homes. This art-based immersive project blends a sculptural object with virtual visuals supported by sound. Addressing diaspora communities through a VR sculpture installation experience is a unique way to signify the narratives of diaspora communities world-wide and to represent the dispersal of individuals from their places of origin to their host countries [1] from an imaginary viewpoint. Diaspora communities often confront challenges in preserving cultural memories and showcasing resilience when faced with the loss of connection to their homeland [2]. These challenges engender a complex interplay between the homeland and host country, fostering group consciousness and unique identities within diasporic communities [3].

This research is grounded on theories stipulating that technological advancements facilitate innovative solutions to address issues within diasporic communities. As noted by Oiarzabal [4], immigrants are utilizing new media and technical networks to establish international connections, bridging the gap between the diaspora and their home countries. These endeavours aim to meet the distinctive needs of immigrants. Meanwhile, Ponzanesi [5] delves into how new media technologies are reshaping the journey of displacement and highlights the multi-faceted dimensions of this phenomenon, including visualization and extended reality [5]. While not directly addressing VR, these works inspired this study, situated at the intersection of technology and immigration, to adopt a combined physical and virtual approach within a creative context.

Prior studies in the realm of VR as it relates to diaspora have explored various applications, including connecting diaspora members through shared VR instances, exemplified by the application Udessa [6], which aims to connect diaspora members through shared VR experiences, resembling a virtual meeting space. However, this VR application is outside the scope of our study. An alternative approach encompasses the recreation of distinct geographic locations or cities, as exemplified by Burman's work [7], particularly for diaspora communities originating from those areas. This approach inspired our visual representation of the "home" concept. However, our research takes a distinct approach by focusing on emotions related to the broader notion of home and mainly drawing inspiration from the interdisciplinary field of the psychology of home.

VR visuals provide a means to depict a more expansive and imaginary interpretation of the concept of "home" and investigate the influence of technology on the narratives of resilient communities, as highlighted by McKay [8]. Our study ac-

knowledges the positive impact of technology and, without aiming to replicate a specific location, explores how individuals from Asian diasporic backgrounds experience "home" through a multi-sensory immersive art installation. Within our VR experience, participants encounter a nonlinear narrative where different homes are dispersed and rebuilt in an ongoing loop. This dynamic portrayal captures the changing landscape that comes with immigration. The immersive visuals and sound, coupled with a physical sculpture (see Figure 1), allow for a more comprehensive exploration of the emotional and psychological dimensions of "home" within the context of the Asian diaspora. For instance, in the VR scene walls consist of countless particles symbolizing porous memories of cultural and symbolic elements. To further tailor the participants' experience we included subtle Asian architectural motifs of window and door designs (see Figure 2).



Figure 1: A woman engaged in a VR journey while seated on a soft sculpture.

This art-based research project is anchored in a multisensory narrative, inviting participants to experience being at "home" and sensorially adapt to a re-defined context of home as virtual rooms simultaneously construct and deconstruct. The research data collection strategy includes an emotion rating survey, and an interview questionnaire. The research findings and discussions come from the participants' feedback on the VR installation experience, their perceptions and emotional response, and the researchers' interpretation of the collected data. The study concludes by emphasizing the potential of VR as a powerful storytelling tool for diasporic communities. The results also demonstrate that Embosom influences and contributes to an increased feeling of "home," and incites participants to reimagine immigration through an immersive experience facilitating their adaptation to a host environment.

Literature Review

The foundational works of Safran and Cohen [9, 10] are pivotal in shaping our comprehension of diaspora. These scholars offer profound insights into the complex nature of diasporic communities, examining the dynamics of dispersion and the preservation of cultural identity. Safran's contributions are particularly notable for exploring diasporas as intricate, multi-dimensional constructs, with a focus on the concepts of "homeland" and "hostland" [9]. Conversely, Cohen presents a contemporary analysis, concentrating on global diaspora networks within today's interconnected modern world [10]. Additionally, our study is informed by the research in diasporic psychology, particularly through the work of Christou [11]. His investigations delve into the psychological aspects of diaspora, highlighting the emotional experiences, resilience, and the sense of belonging within diaspora communities [11].

Moreover, our research is influenced by the field of VR and its application to diasporic interactions, as seen in projects that recreate cultural landmarks or establish virtual spaces for specific diaspora communities [6]. Distinct from previous endeavors that focus on particular locations or shared VR interactions, our study investigates the fundamental notion of "home" by combining a tangible sculptural form with VR visuals and auditory elements. This innovative method provides a fresh lens through which to understand how users can acclimate to a host country by engaging with tactile sensations, while also fostering their imagination through VR immersion. This imaginative non-location-specific approach enables a deeper examination of the concept of "home," including how adaptation and the formation of new perceptions occur within diasporic communities. Departing from the conventional VR projects related to diaspora, Embosom introduces a multi-sensory journey that enhances immersion by combining tactile, sensory, and auditory experiences, offering a richer understanding of diaspora through the lens of virtual reality.

Home in Diaspora

The concept of "home" encompasses both physical and psychological spaces that foster cultural and personal connections, as highlighted by Moore [12]. Moore emphasizes the connection between the physical and psychological aspects of home while Cohen explicitly explores how the context of home directly relates to that of diaspora [10]. In this paper, we delve into the concept of "home," from a diasporic perspective, acknowledging the intricate relationship between "home" and "diaspora," as emphasized by Cohen [10]. Motivated by these connections, our VR visuals offer an imaginary diasporic interpretation of "home." We portray the everevolving nature of homes through subtle movements of particles, symbolizing the fragmented essence of home and memories (see Figure 2).

The understanding of the relationship between diaspora and home is complex due to the diverse historical backgrounds and motivations tied to displacement [1]. Initial efforts, such as Safran's classification [9], attempted to define diaspora by focusing on concepts of pain, expulsion, and

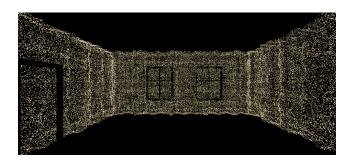


Figure 2: A screenshot from the Unity-created VR visual featuring particle-built walls.

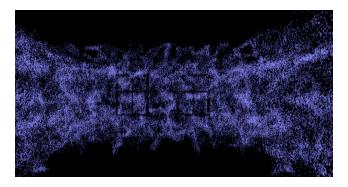


Figure 3: A screenshot from the Unity-created VR Visual: Wall particles in motion, influenced by a simulated Perlin noise force.

longing [9]. However, this approach proved limited in capturing the full range of diasporic experiences. From a different perspective, Clifford [13] explores diaspora as a complex phenomenon involving the movement, dispersion, and relocation of communities away from their ancestral homelands. This relocation is not restricted to physical space but could include culture and memories [13]. Influenced by Clifford [13] and Cohen [10], in this art-based research, diaspora is characterized as a collective bond of connection, memories, and culture among dispersed members of an original home, even as they adapt and integrate into their adopted environments. It is important to note that diaspora journeys can vary significantly among different communities [13]. In this research, we directly address the Asian diaspora residing in Canada. The study aims to understand how members of this community engage with a multi-sensory VR sculpture installation that explores themes of home and resilience.

VR Installations and diaspora

A multi-sensory VR installation about diaspora can be a powerful way to convey the journeys, stories, and emotions of communities dispersed from their original homeland. While immersive audio-visual projections offer a valuable experience, our preliminary research indicated that VR was the most effective way to achieve our project's goals. VR allows participants to have an embodied immersive experience, providing a more intimate connection with spatial contexts of "home." Additionally, VR minimizes external distractions,

allowing participants to fully connect with the soundscape, moving particles, and other visual elements. VR also allows for immersive and empathetic storytelling [14], which can challenge the way users reimagine their stories and memories. This project constructs a virtual world that highlights the psychological consequences of diaspora ventures during transitions between homes, with a focus on fostering positive changes, adaptability, and resilience.

The intersection of VR environments and diaspora is crucial in situating this project among existing literature, but relatively few research groups in the virtual realm do address diasporic concerns. Among them, the non-profit organization Black Learning Achievement and Mental Health (BLAM) has introduced an innovative Augmented Reality (AR) application called History Bites [15]. This AR app allows users to engage with cultural narratives, participate in educational quizzes, and gain a deeper understanding of diasporic narratives [15]. Another category of VR projects focuses on bringing diaspora members together through virtual spaces. Udessa's VR application [6] facilitates virtual gatherings and site visits, connecting first-generation Americans, immigrants, and their African home countries. This immersive platform fosters cultural connections that surpass the capabilities of conventional social media tools [6].

These examples demonstrate, from specific viewpoints, the potential of VR in the field of diaspora studies. Most projects simulate specific locations or set out virtual meeting spaces, as seen in Udessa's VR application [6]. In contrast, our project delves into the concept of "home" in relation to diaspora adaptability to significant life changes. We also deliberately chose to go beyond geographical spaces and event-based limitations to trigger participants' imagination and emotional responses.

Research Methodologies

Our art-based research project is anchored in methodologies derived from phenomenology and the psychology of home. It fulfills a dual objective: applying a phenomenological approach to evoke a sensorial experience of "home" through VR technology, soothing audio, and a tactile sculpture, while simultaneously integrating insights from the psychology of home to cultivate resilience in the host country. These methodologies inform the VR content design and our exploration of the impact of immigration on individuals' sense of belonging, memories, and attachment to home [11].

Furthermore, our project's conceptual framework draws inspiration from Jean-Paul Sartre's seminal work, "The Imaginary: A Phenomenological Psychology of the Imagination" [16]. In this publication, Sartre explores the power of imagination as timeless, unbounded by physical laws, and capable of eliciting strong emotional responses. In alignment with Sartre's insights, our project designs the spatial qualities of the virtual home to evoke a sense of belonging, modulated by the power of imagination. This approach enables participants to experience a space that is not only immersive but also deeply resonant with their individual perceptions of "home," thereby reflecting Sartre's emphasis on imagination as a pivotal force in shaping human experience. In our project, the modalities of the virtual home spatial qualities aim to evoke a

room modulated by the power of imagination through which individual participants can experience a sense of belonging.

Creative Experimental Design

In our creative project, the concept design comprises a tangible sculpture linked to a VR immersive experience and sound design (see Figure 4).



Figure 4: A participant is lying on the fabric sculpture wearing a VR headset and headphones while immersed in the multi-sensory experience.

The design process emphasizes the significance of lived experiences. We drew inspiration from informal discussions with individuals connected to the Asian diaspora, born in India, China, and Iran. Their insights on concepts of home and cultural influences provided valuable perspectives for the thematic and design elements of the VR environment, such as the room acting as a metaphorical representation of home and movement symbolizing journeys and transitions. Additionally, the design is informed by the theoretical frameworks previously discussed, offering a broader understanding of themes related to home and immigration through the lens of imagination.

Inspired by Sartre's phenomenological psychological approach, our VR immersive experience depicts a room with fragmented walls within a timeless spatial context, aiming to evoke sensory feelings of "home." Imagining a room with walls made of particles, we intentionally excluded a horizon, floor, and ceiling to amplify the sensation of floating memories within a suspended, abstract spatial context that elicits emotional responses (see Figure 2)). Within "The Imaginary," Sartre explores the transformative potential of imagination, emphasizing the human creative mind's capacity to transcend physical world constraints [16]. His exploration of how imagination intertwines with reality has shed light on the potential of VR to instill a feeling of "home" inside a diaspora community. Sartre indicates that imagination is not limited to abstract thinking but is closely linked to our emotions [16]. He suggests that the mental images we create can evoke strong emotional responses, thus influencing how we perceive and act in the world [16]. Sartre also suggests that the 'imaginary' is unconfined by the spatial dimensions governed by physical laws [16]. Drawing inspiration from Sartre's concept, we leveraged the limitless possibilities of the VR environment to craft abstract visuals that mirror imaginative constructs. Our project's visuals employ arbitrary forces, dispense with the horizon, and feature silhouettes of moving windows and doors

Furthermore, the concept of "the fluidity of home for the diaspora," as described by Bhandari [17], comes to life in our VR experience. We used dynamic particle systems from Unity Game Engine to create rooms that appear to breathe and evolve, following a nonlinear visual narrative (see Figure 3). Each particle represents a memory, a fragment contributing to a metaphoric mosaic of participants' perception of "home." The "forces" applied to the particles trigger an action forcing the walls to collapse and reconstruct, symbolizing the fragmented nature of home and the beauty of transformation. The changing colors of the particles forming the room walls move from warm creamy hues to ocean and sky blue tones ((see Figure 3)) to illustrate the pathways of immigration. When one room collapses, another one appears, and as the colours shift into darkness, an imaginary new home emerges, highlighting the resilience and adaptability of the diasporic community. Displacement is visually represented through moving windows and doors. The windows symbolize hope (see Figure 5) and represent ongoing changes. Meanwhile, the doors symbolize a departure and arrival, underscoring resilience in the context of displacement.

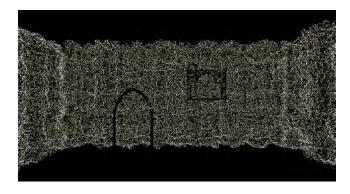


Figure 5: A screenshot from the Unity-created VR visual: illustrative cultural symbols in the door and window.

An essential component of our installation is the physical sculpture, designed to evoke tactile sensations. Participants are invited to sit or lay on a soft sculpture made of various fabric textures, each reminiscent of distinct tangible memories of home (see Figure 4). The fabric is intended to play a neutral role where each texture can trigger distinctive memories of home for participants from diverse backgrounds (India, China, and Iran). The inclusion of a tactile material element is inspired by the works of scholars such as Serres, particularly his exploration of "The Five Senses," [18] which underscore touch as a fundamental and direct connection to the material world [18]. On the other hand, Jorgensen's research [19] highlights the crucial role of sensory engagement and

materiality in immersive art [19]. By incorporating a tangible physical element into our VR sculpture installation project, we aim to enhance the participants' sensory experience and evoke emotional connections to the concept of "home."

To capture the cultural backgrounds of immigrants and the memories of their previous homes, we explored the role of sound in enhancing the immersive nature of our work [20]. An original sound piece, composed to complement the VR visuals, fosters a holistic sensory venture through soothing humming, forest ambiance, and gentle breathing sounds. The soundscape, while acknowledging the rich cultural mosaic of the Asian diaspora, emphasizes the universality of nature's role in shared human experiences. The wind, flowing water, and birdsong weave an acoustic tapestry that connects individuals to their environments, bridging past and presents. Humming is thoughtfully integrated to promote meditation and tranquillity, while forest sounds deepen the connection with nature often seen as an ultimate home. A subtle breathing sound is meant to ground participants, reminding them of their physical presence within the VR sculpture installation. This sound piece works in tandem with the VR visuals to reforge a connection to a sense of "home" for the Asian diaspora.

The installation eschews direct agency through interactivity, in favor of subtle engagement to foster contemplation and introspection. Inspired by Sartre's notion of imaginative agency [16], the design choice empowers participants to shape their own distinctive experience of "home." By controlling the audio volume, choosing their seating position, and directing their gaze by moving their head in the VR space, individuals engage actively with the installation. This multi-sensory strategy, free from overwhelming interactive demands, cultivates a meditative environment that encourages a deeper examination of the concepts of home and immigration.

Case Study Approach

Our study employs an interview questionnaire and an emotion rating survey to collect data on participants' responses and emotional feedback [21] on our VR project. It is crucial to note that our research sample consists of 12 participants from the Asian diaspora in Canada. This sample size enables an exploration into the complex domain of emotions, though our findings are not aimed at broad generalization due to the limited number of participants. While acknowledging the inherent diversity within the Asian diaspora, finding a single term encompassing all participants with perfect accuracy posed a challenge. "Asian diaspora," as an inclusive category, acknowledges the shared historical and cultural connections among participants, recognizing that their experiences contribute to the multifaceted narratives of the Asian diaspora as a whole.

The emotion survey plays a crucial role in measuring participants' emotional states before and after their interaction with the VR sculpture installation. We utilized a modified version of the Positive and Negative Affect Schedule (PANAS) [22], a well-established tool for assessing both positive and negative emotions. In alignment with the specific sensory focus of our study, we deliberately chose five pos-

itive and five negative emotions for this survey (see Figure 6). This selection ensured that the survey remained concise and pertinent to our research objectives. We gathered baseline emotion scores from each participant at the pre-survey stage or prior to the survey. Then, we assessed the impact of the VR experience by comparing these baseline scores at the post-survey stage or after the survey. Notably, participants completed the pre-survey before engaging with the VR installation, with results kept confidential during the post-survey to preserve data integrity. We intentionally opted not to assess the prior VR experience of participants in our survey due to the specific nature of our project and our research objectives. By designing the experience to be intimate, non-interactive, and conducted in a seated position, our goal was to ensure that the study was approachable and impactful for a wide audience, including those with no VR experience at all. This approach allowed us to focus on the core emotional reactions to the VR content itself, rather than the variability introduced by differing levels of VR familiarity among participants.

The interview questionnaire was instrumental in delving into participants' perceptions of "home" in the context of the Asian diaspora. It enabled us to elicit more detailed and nuanced feedback on how various elements of the installation affected participants' emotional states. It also provided an opportunity to capture additional anecdotes and feedback, such as specific memories evoked or any particularly notable sensations felt by the participants. The questions also informed on participants' emotions, insights, dominant sensations, triggered memories of home, the impact of the physical sculpture, perception of visuals, and the influence of the sound piece. It also provided critical feedback on the VR headsets causing discomfort and distraction from the immersive experience.

Ethical Considerations

In research involving human participants, the protection and safety of these individuals, alongside the respect for their data privacy are of paramount importance [23]. In line with this principle, our study adhere to the ethical guidelines set forth by the Canadian Research Ethics Board (REB) in 2023. We secured REB approval and abided by their recommendations concerning installation setup and acquisition of participant consent. The well-being and safety of participants were prioritized throughout the study. Given the immersive nature of a multi-sensory VR installation on themes of home and diaspora, we anticipated potential emotional intensities and distress related to personal histories [24]. To mitigate risks, the installation was designed to be comforting and home-like, with participants remaining seated during the brief 6-7 minute sessions to ensure safety and comfort. While our VR installation aimed to evoke a sense of "home" for the diaspora, we acknowledge the complex and sometimes traumatic elements of diasporic journeys, as reflected in various art-based explorations of immigration [25]. While our study does not address trauma directly, we acknowledge the complex and challenging aspects of home, which are not always associated with positive feelings [26].

Results and Insights

Our art-based research project aims to evoke feelings of being at home through a VR sculpture installation supported by nature sound. To assess the impact of this experience, participants diligently completed both a survey and a questionnaire before and after the VR experience. The emotion rating survey indicated a strong emotional state of comfort and happiness, while the interview questionnaire provided insights into how specific aspects of the VR installation particularly the particle walls, significantly influenced participants' sense of "home." Implementing a repeated measures survey was crucial for comparing emotional states before and after interacting with *Embosom*, allowing for an evaluation of the experience's effect on emotion ratings. We adapted our data collection strategy from the PANAS psychological assessment tool [22], concentrating on five positive and five negative emotions, including happiness, calmness, fear, and anger. Participants used a 0 to 10 scale to rate their current emotional state before and after the experiment.

The results, illustrated in Figures 6, 7, and 8, show variations in emotional scores, with positive emotions generally increasing and negative emotions decreasing, aligning with our goal of creating a comforting environment. The charts indicate the changes in emotional ratings, calculated by subtracting the emotional responses after the experience from the emotional scores obtained before experiencing the installation (i.e., the baseline value). For example, a value of 2 associated with happiness indicates an average increase of 2 in reported happiness scores. In contrast, negative values on the chart indicate a decrease in reported scores for those feelings. These differential figures are presented as averages across all participants (see Figure 6). The results are further categorized by criteria such as gender and age (refer to Figures 7 and 8).

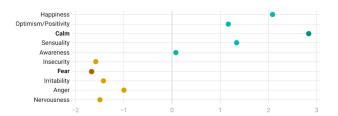


Figure 6: Average of changes in reported emotional scores among all participants.

- Figure 6 illustrates the variations in emotions due to the experience. Ratings for most positive emotions, such as "Calm," increased after the experience, while negative emotions, such as "Fear," decreased after the experience. "Awareness" showed only a slight increase in total. Potentially due to the immersive nature of the installation, that might have decreased awareness feelings in some participants after the experience. These results are aligned with the project goal of creating a homey environment
- Figure 7 illustrates aggregate emotional trends among different age groups. Notably, the younger group demonstrates a more significant decrease in negative emotions,

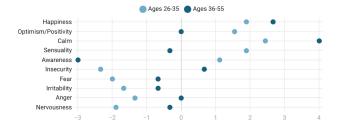


Figure 7: Comparing emotional responses: Shifts in averaged reported emotional scores analyzed by age (26-35 vs. 36-55).



Figure 8: Gender differences in emotional responses: Averaged changes in reported emotional scores by male and female participants.

likely influenced by their higher baseline ratings for negative feelings. In contrast, results for the older age group show a more significant variability, where "Calm" significantly increased, but "Optimism" on average remained unaffected.

• Gender-specific data (see Figure 8) indicates that female participants reported a more significant reduction in negative emotions, which could be attributed to their higher initial levels. Both male and female participants exhibited similar enhancements in positive emotions. On average, females showed above-average improvement in positive emotions, while males had below-average improvement. Similarly, male participants exhibited a less considerable decrease in negative emotions, considerably lower than average.

Overall, the survey indicated a general rise in positive emotions and a reduction in negative emotions, which is in accordance with the primary goal of our project to create feelings of connection and resilience. However, it is important to note that due to the limited size of the participant groups, we cannot generalize these findings across different gender and age categories.

In art-based research, questionnaires are essential for collecting participants' subjective feelings and insights regarding personal topics like home and immigration. In our study, the questionnaire helped us gather emotional and sensory responses, providing valuable insights into the impact of our work. The following are key findings from the interview questionnaire based on participants' feedback:

• Impacts of the VR Visuals: Interacting with our multi-

sensory VR sculpture installation consistently generated a sense of calmness during the imaginary walls transition, collapsing and reconstructing, that symbolizes the fragmented nature of home and displacement. Many participants reported experiencing a profound feeling of being at "home" and vividly recollected cherished memories. These emotional responses were common and significant outcomes from participants engaging with the VR visuals.

- Positive Role of Tactile Sculpture: The soft fabric sculpture worked in synergy with the VR visuals, enriching the overall immersive feeling of "home." It provided comfort and a welcoming sense, making the installation more inviting.
- Influence of Sound: The sound component supporting the visuals fostered a sense of calmness and escapism. It moved participants from a VR spatial context back to the physical world with the presence of soothing breathing sounds. The sound piece created an imaginary forest atmosphere, instilling a sense of calm through gentle humming.
- Impact of VR Headset: The study indicates that most participants did not find the VR headset technical equipment uncomfortable or distracting. However, two participants mentioned that the VR goggles felt heavy and slightly intrusive.

Key findings from the interview questionnaire highlighted the significant role of the VR visuals in evoking feelings of being at "home." Participants listened to the sound piece using headphones, blocking external distractions. This seclusion created an intimate and focused environment, strongly connecting the sound piece and VR artwork. Feedback from our case study participants indicated that sound and visuals worked together seamlessly, resulting in a fully immersive experience. The survey and questionnaire's results provide valuable insights into participants' emotional feedback and sensory encounters. In the following section, we will synthesize and analyze the findings from both the interview questionnaire and survey, focusing on the significance of our study.

Significance and Implications

The project's significance lies in its resonance with the concept of "home," especially in a world marked by globalization, where immigration contributes to a diversity of cultural backgrounds increasingly prevalent in today's society. Our project provides insight into how individuals of Asian diasporic backgrounds reimagine transitioning between homes through a VR sculpture installation, with visuals and audio perceived and experienced in the context of home and displacement from a creative viewpoint.

Our study stands out for its innovative approach to imaginary spaces experienced through VR visuals and for how it stimulates positive emotions and fosters imagination around the concept of "home." Unlike conventional VR installations related to diaspora, *Embosom* offers a nonlinear narrative and creative representation of home and immigration through dynamic visuals. Participants reported heightened calmness and reduced anxiety and fear while interacting with the multi-

sensory VR sculpture installation project. The VR visuals emerged as the most immersive component, closely followed by the sound piece and the soft fabric sculpture. User feedback underscored the influential role of moving particles in the VR visuals that triggered a dynamic feeling through an imaginary homeland context. Additionally, the physical sculpture and sound piece played pivotal roles in providing comfort and enhancing immersion, highlighting the significant role of the physical object in the design of immersive VR installations.

In essence, our study explore the intricate interplay between the psychology of home, phenomenology, and phenomenological psychology aiming to facilitate the Asian diaspora's adaptation to a redefined concept of "home" through a sensory experience. Despite the limited scope of our findings, they offer valuable insights into the dynamics of diaspora and the ongoing search for a sense of home. We are optimistic about the contributions of our art-based research to the field, believing in the potential of imaginative approaches to aid diaspora communities in adapting to new environments and fostering a more inclusive society.

Conclusion

Embosom, through its multi-sensory and immersive VR sculpture installation, seeks to address the adaptability and resilience of the Asian diaspora in Canada. Feedback from participants, gathered via a survey and questionnaire, underscore the potential and effectiveness of immersive experiences in fostering a sense of home, connection, and resilience facilitated by nonlinear, visual and sensory interactions. This phenomenological psychological approach validates the project design goals, with participants reporting enhanced feelings of calm, connection, resilience, and memory recall throughout the experience. The comforting effect of the soft fabric sculpture on which participants laid down wearing the VR headset, the imaginary visuals supported by the soothing soundtrack component, provided homey sensations and constructive feelings.

The study suggest that the integration of art and technology can significantly support adaptability and positive change within diaspora communities, deepening our understanding of their resilience. Looking forward, there is an interest in exploring the integration of generative AI into project design and the creation of VR content, as well as investigating new scenarios where users can input prompts or cues into the AI system and vice versa. We envision future AI-driven creative projects generating visuals that align more closely with users personal preferences and memories. As AI and VR technologies continue to advance, the future holds promise for highly sensorial and personalized immersive experiences integrating tactile or palpable elements such as sculptural objects, into the design of immersive creative VR installations projects.

References

[1] Reis, M. 2004. Theorizing diaspora: perspectives on "classical" and "contemporary" diaspora. *International Migration* 42(2):41–60.

- [2] Shuval, J. T. 2000. Diaspora migration: Definitional ambiguities and a theoretical paradigm. *International migration* 38(5):41–56.
- [3] Newland, K. 2010. Voice after exit: Diaspora advocacy.
- [4] Oiarzabal, P. J., and Reips, U.-D. 2012. Migration and diaspora in the age of information and communication technologies. *Journal of Ethnic and Migration studies* 38(9):1333–1338.
- [5] Ponzanesi, S. 2019. Migration and mobility in a digital age:(re) mapping connectivity and belonging. *Television & New Media* 20(6):547–557.
- [6] Hastings-Spaine, N. 2021. Next generation computing connecting the diaspora using virtual reality. Accessed on 15.01.2023.
- [7] Burman, N. 2023. Baff akoto, diasporic consciousness in virtual reality. Accessed on 05.10.2023.
- [8] McKay, D. 2017. The Virtual Meets Reality: Policy Implications of E-Diasporas. Australian Strategic Policy Institute.
- [9] Safran, W. 1991. Diasporas in modern societies: Myths of homeland and return. *Diaspora: A journal of transnational studies* 1(1):83–99.
- [10] Cohen, R. 2022. Global diasporas: An introduction. Taylor & Francis.
- [11] Christou, A. 2011. Narrating lives in (e) motion: Embodiment, belongingness and displacement in diasporic spaces of home and return. *Emotion, Space and Society* 4(4):249–257.
- [12] Moore, J. 2000. Placing home in context. *Journal of environmental psychology* 20(3):207–217.
- [13] Clifford, J. 1994. Diasporas. *Cultural anthropology* 9(3):302–338.
- [14] Georgieva, I., and Georgiev, G. V. 2019. Redesign me: Virtual reality experience of the line of life and its connection to a healthier self. *Behavioral Sciences* 9(11):111.
- [15] Wong, H. 2020. This educational app creates ar statues of black figures from history. Accessed on 09.11.2022.
- [16] Sartre, J.-P. 2010. *The imaginary: A phenomenological psychology of the imagination*. Routledge.
- [17] Bhandari, N. B. 2021. Diaspora and cultural identity: A conceptual review. *Journal of Political Science* 21:100–108.
- [18] Serres, M. 2008. *The five senses: A philosophy of min-gled bodies*. Bloomsbury Publishing.
- [19] Jørgensen, J. 2019. Constructing Soft Robot Aesthetics-Art, Sensation, and Materiality in Practice. IT-Universitetet i København.
- [20] Droumeva, M., and Jordan, R. 2019. *Sound, media, ecology.* Springer.
- [21] Bullock, C. M., and Beckson, M. 2011. Male victims of sexual assault: Phenomenology, psychology, physiology. *Journal of the American Academy of Psychiatry and the Law Online* 39(2):197–205.

- [22] Watson, D.; Clark, L. A.; and Tellegen, A. 1988. Development and validation of brief measures of positive and negative affect: the panas scales. *Journal of personality and social psychology* 54(6):1063.
- [23] Cox, S. M.; McDonald, M.; and Townsend, A. 2020. Epistemic strategies in ethical review: Reb members' experiences of assessing probable impacts of research for human subjects. *Journal of Empirical Research on Human Research Ethics* 15(5):383–395.
- [24] Han, D.-I. D.; Bergs, Y.; and Moorhouse, N. 2022. Virtual reality consumer experience escapes: preparing for the metaverse. *Virtual Reality* 26(4):1443–1458.
- [25] Mathur, S. 2011. *The Migrant's Time: Rethinking Art History and Diaspora*. Yale University Press.
- [26] Ahmed, S. 2020. *The promise of happiness*. Duke University Press.