

# New Efficacies for Audience/Performer Interactivity and Responsive Narrative in Immersive Theatre

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**Abstract.** Immersive virtual reality (IVR) has substantial possibilities for students to learn remotely through exploration, collaboration, and socialization. IVR is well suited to theatre, which relies on interpersonal attributes to demonstrate actor relationships and character development. IVR theatre can break down the fourth wall to connect audience members and actors in the same physical space, thereby removing the barrier of the stage and placing the audience within the storyline. In this study, a high-caliber youth theatre group was tasked with writing, workshopping, directing, rehearsing, and performing a play for a live audience in AltspaceVR. Grounded by current literature on the affordances and limitations of IVR for learning, this research followed six high school students imagining, designing, and delivering an immersive theatrical performance. Findings report how youth are experimenting with immersive technologies to take traditional theatre in new directions, including audience interaction, responsive narrative, and actors/actresses performing as digital avatars. We highlight pedagogical strategies and design recommendations for working with youth to integrate IVR theatre experiences in secondary education.

**Keywords:** immersive theatre, youth, interactive performance, digital avatars, student agency, community engagement

## 1 Introduction

In the context of this study, there were limited possibilities for students to become involved in extra-curricular school activities due to COVID-19 provincial mandates. Schools were not permitted to host any instruction outside regular school hours to reduce the potential of COVID-19 transmission. IVR was a new communication tool utilized as a direct and necessary solution to address 2021 pandemic restrictions, offering a safe alternative for students to gather, express artistic creativity, and develop theatrical production competencies. Youth taking on the challenge of performing as digital avatars was an impressive and innovative undertaking; live IVR theatre performances are still an elusive concept for most actors and professional theatre companies. To date, most inquiries focus on productions with adult performers [1, 2]. This research reports best practices for working

with secondary students in IVR, to guide other researchers and educators for using immersive design when the need or opportunity arises.



**Fig. 1.** Student characters in performance.

## 2 Learning Activities

The theatre students collectively designed the plot and wrote their characters under the creative direction of an instructor. Students designed virtual avatars with specific costumes and visual appearances to appropriately represent their characters (see Figure 1). The youth wrote the script with purposeful involvement of audience members as part of the narrative, utilizing and adapting to the affordances of the IVR medium to enhance the performance impact. The youth performers memorized lines and delivered an original reality TV show experience called *LIMBO: A Fate Better Than Death*. Audience members were referenced throughout the performance and asked to vote on their favourite contestant. Before the show began, the audience members were requested to put a skeleton hoodie on their avatar to become a part of the ‘dead’ studio audience (see Figure 2). As the performers developed relationships with audience members by including them in the narrative, the fourth wall (or the boundary of the traditional theatre stage separating actors from the audience) was removed. The audience played an integral role in the storyline of the IVR theatre performance.



**Fig 2.** The AltSpaceVR skeleton hoodie worn by the 'dead' studio audience.

### **3 Learning Affordance: Sustainable Performance**

A significant advantage identified by the theatre students was how performing in IVR can be affordable and environmentally friendly. Rather than performers and audience members individually commuting to a venue, everyone was able to participate in immersive theatre using a head-mounted display or computer compatible with AltSpaceVR requirements. Instead of needing numerous set, costume, and prop pieces to be designed and then thrown away, the youth were able to utilize digital elements to reduce the ecological footprint of their performance. Similarly, [1] explored *Alice's Adventures in Wonderland* with multiple performers and audience members. The creators were able to change the scale of the environment to tell the story, stage a scene for multiple perspectives, and share this in real-time. Overall, the carbon footprint was reduced by limiting the physical elements required for the IVR performances.

### **4 Recommendations for IVR Theatre Instructors**

- *Set realistic expectations for students.* Using new technologies that students are less familiar with will have a learning curve and it is important not to expect students to know how to do everything right away. Also, IVR studies have noted that the synchronous timing of online communications is challenging, and it can be time consuming to resolve technical problems in a live performance [3, 4].
- *Empower students as creators and partners in production.* Generally, learners will care more about something where they feel a sense of agency and ownership.

Ownership in learning has been achieved in previous VR studies by allowing students to work at their own pace, with directional freedom in creating art and virtual worlds [5, 6]. Including learners in making major decisions involving their work and giving them as much creative freedom as possible will result in a more meaningful experience than if youth are told how to do everything.

- *Focus on learning objectives.* It is essential to ask what the purpose of the learning is and make sure that IVR is useful for achieving this purpose. [7] suggests rigorous instructional design must ensure consistency between the curriculum, the teaching approach, the learning context, and the assessment procedures. IVR should not be used for the sake of using IVR because of its coolness factor. Instead, it should be a tool selected for achieving learning outcomes or targets.
- *Schedule time for collaborative challenges.* It is important to make time for students to create together and learn to trust each other. Examples include creating a scene from a list of 10 impossible things or adding a scene inspired by a favourite TV show. Practicing various written or improvised scenes will inspire creativity, collaboration, and improved theatre competencies.
- *Practice vocal projection.* The human voice is the most alive characteristic in the virtual world, so it is advantageous for actors to fine-tune the vocal delivery of their dialogue. [2] identifies sound technology and vocal performance (pitch and accent) as features that elevated the IVR performance. There are a variety of individual and group drama exercises to support students in developing the voice of their character.
- *Be inclusive and open-minded.* Educators should allow diverse representation of student avatar identity, within the limitations of what is appropriate and culturally sensitive for school settings. [8] suggests that users who created an avatar of their ideal self-reported greater psychological immersion than those who created a replica of an avatar that mirrors their actual self. Open-mindedness to youth expression and personal creative choices will make youth feel more comfortable and welcomed in the IVR environment.
- *Have fun.* Attitudes and positivity are infectious, so if teachers have fun with the process, students will likely have a memorable learning experience. Anticipate unforeseen problems and intentionally encourage yourself and the students to stay motivated when issues arise.

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