Virtual Reality and GED® and Prep

Introduction

Immersive learning utilizes augmented, simulated, or purely artificial environments for learners to experience scenarios and simulations. There are many popular technologies for immersive learning experiences such as virtual reality (VR), augmented reality (AR) and 360º video, to name a few. It gives families the chance to engage with technology for enhanced learning experiences.

According to a 2020 study conducted by Price Waterhouse Coopers (PwC), VR learners require less time to learn, are more focused and confident, exhibit stronger social emotional connections to content, and are more empathetic.

Purpose of Project

The purpose of this portion of the pilot project was to explore how virtual reality (VR) could be used in the adult education classroom. A few of the staff from WKYCTC, Madisonville, and Henderson adult education programs attended a two-day in person training in February 2023. During this meeting, each PLC was provided with Meta Quest 2 headsets and received guided instruction on how to use this equipment, as well as Spatial, the application to be used for development. The instructors also received a thorough introduction to the principles of co-design.

During the brainstorming sessions, participants were asked to consider this question:

How can virtual reality be used to impact our adult learners in one or more of the following areas?
• Learner goals and interests
• IET/WPL Connections
• Career Readiness
• GED Test Prep

Scope of Project

After introducing the pilot participants to virtual reality via Meta Quest 2 headsets and the Spatial platform, each PLC was tasked with using VR to create an immersive learning experience. The criteria for this pilot project was that the room needed to focus on a specific academic content area, and instructors needed to work with their students to plan and design the room.

All PLCs met with the NCFL team on a weekly basis to discuss progress made, ask questions, and receive assistance as needed. As the rooms were being developed, there were opportunities for each of the groups to review rooms and provide feedback to the other PLCs. As the rooms neared completion, the NCFL team met with each PLC individually to walk through the room (in Quest 2 headsets).

Henderson Community College Adult Education

For Henderson Community College KYAE, the concept of our virtual reality project was to create an environment in which students could learn how to successfully perform unit conversions in a healthcare setting. The purpose of this context was to aid in a healthcare mathematics IET the adult education department is negotiating with the allied health programs offered at the college.

A large gallery was chosen from the 3D templates provided by Spatial. This gallery contained three rooms, each of which is dedicated to a mathematical concept necessary for unit conversions: multiplication, division, and unit conversion practice. These rooms contain videos, infographics, and practice problems.

Students were selected for participation based on their attendance in the program and need for the mathematical concepts offered in the gallery. These students provided feedback on the layout of and content in each room. Based on their suggestions, the rooms were altered as they reached design completion.

Throughout the gallery, real-world questions are posted for students to practice their skills, and these questions demonstrate that students will gain skills that are not only helpful in academia, but also in their daily lives.

In the future, more galleries will be designed for other content areas. The next gallery will focus on an English competency to help with skill acquisition for all students in the adult education program. The design in future galleries will also focus on real-world applications, just as this first gallery has done.

Conclusions

Each PLC reported a positive experience with this VR Pilot. Both instructors and students were exposed to a new technology that can be used to enhance student learning. All PLCs have plans to continue using virtual reality as a supplemental instructional resource.

Madisonville CC Adult Education

Our concept idea was to create a room that would help strengthen student skills in math. The goal was to give students hands-on experience seeing the idea of scale and introduce problem-solving strategies using virtual reality allowed students to actively learn and work with ideas regarding scale.

After discussions with students, and cross referencing with GED score reports, it was very clear scale was an area students were struggling to conceptualize. Students decided this would be the best concept to learn. It was also clear students wanted a way to visualize or apply the idea of scale in a hands-on manner.

An open and airy mountain lounge was chosen as the virtual reality setting to provide ample space for interacting with and manipulating large objects.

The theme of the room is scale, comparing identical items that share large size discrepancies and analyzing the mathematical implications of those differences.

Activities include visualizing and rescaling small and large versions of animals and objects to demonstrate the effects of scale ratios, viewing a video modeling the process of calculating scale, and participating in practice exercises to show learning comprehension.

VR lends itself to abstract ideas that students may not interact with in a day-to-day setting. VR allows us to take a "concept first" approach to learning. Students can interact in settings that involve the idea and then interact with the idea before even having to learn mathematical formulas. This leads to students being able to understand the application or need for the formula as a means to solve a problem they may encounter in the real world instead of an abstract problem on a test. We are also planning to use VR to connect students with other counties in the state and use VR to build community.

WKYCTC Adult Education

For this pilot project, we developed a virtual reality room with social studies concepts to assist our students in passing the GED Social Studies test. The theme of the room is GED Civics and Government; this was chosen based on student feedback and review of GED Ready reports.

We selected a gallery layout from the setting options provided in Spatial. The topics covered in the room were selected based on the previously mentioned factors (student feedback, GED Ready reports) and include:
• Women and Minority Suffrage
• Propaganda
• How a Bill Becomes a Law
• Three Branches of Government
• What is Protected under the first amendment

The activities in the room were selected because they are High Impact Indicators skills. We developed lesson activities that address skills such as compare and contrast, sequence, and understanding a timeline.

The students, along with instructors, researched the topics to gather information to include in the GED Civics and Government virtual reality room. Students were included in all aspects of creating the virtual reality room, from the concepts to the layout, to the activities to go along with the lesson. Co-designing with our students gave us insight on how the student learns best. With this information, we can create lessons to engage our students to allow them to learn in a way that will strengthen the skills needed to pass the GED social studies test.

The creation of the virtual reality room was a perfect way to allow students to engage in learning in a different way. The students who were selected to work on this pilot program were eager to learn and participate. They gained GED social studies knowledge while experimenting with new technology that is likely to be the cutting edge of Adult Education in the future . One student was able to earn her GED with the help of the VR room. The students working on this project also learned how to communicate effectively, practice active listening, and work with other team members.

We plan to use VR in our classroom to assist students in passing their GED Social Studies test. VR will be incorporated in our reading classes, where we connect reading and social studies material. It will also be used for tutoring sessions in Adult Education in the future.