Campus-Based Student Wellness Event Using Stereoscopic Virtual Reality Equine Interaction

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Introduction/Need for Innovation or Idea

The population of students struggling with mental health across college campuses has risen, and this growth has been attributed to the COVID-19 pandemic (Gianfredi et al., 2024). During the pandemic, the student's isolation and rapid transition to online education hindered the learning process, and in turn, facilitated feelings of depression and anxiety (Adams, 2024; Wolf & Schmitz, 2024). Although today students have returned to in-person learning, mental health challenges within the student population have continued (Toews et al., 2024). These challenges can lead to academic failure unless timely and effective intervention is pursued. As such, on-campus mental health services have evolved to address the increased demand from students. This includes the use of animal-based ecotherapy. This therapeutic strategy facilitates the human-environmental connection and utilizes the mental health benefits associated with interacting with nature, including interactive activities with animals based within their natural environment (Winton et al., 2024). Animal-based interactive activities found on campuses include walking a dog. Even the use of the horse within animal-based ecotherapy on campuses has become recognized for the therapeutic benefits (Holtcamp et al., 2023).

Equine interaction has shown in recent years promise for promoting an emotionally safe environment for learning. An emotionally safe learning environment according to Holtcamp et al. (2023) is defined as "one where the student feels 'valued, respected, and connected to and engaged in learning' so that the student within the learning environment can 'recognize and manage emotions" (pp. 2). Despite research supporting the mental health benefits associated with equine interaction including the equine environment, accessibility to this type of intervention strategy remains limited on most campuses. However, with the use of a stereoscopic virtual reality (VR) headset, the equine environment and interaction with the horse can be simulated three-dimensionally on campuses. This, nonetheless, is a novel approach as current VR systems focused on equine interaction are lacking. Therefore, a stereoscopic VR system facilitating equine interaction was developed and offered during an on-campus student wellness event at Mississippi State University in the fall semesters of 2024 and 2025.

How It Works/Methodology/Program Phases/Steps

Videos of equine interaction were recorded using a GoPro HERO 10 camera with the camera attached to a head strap. Videos included both riding and ground activities (leading and grooming the horse) with the University horses utilized for activities. The videos were downloaded into a Meta Quest 1 VR headset for students to view three-dimensionally the equine interaction videos. Students could select from any of the videos downloaded with videos set on a repetitive loop. Two Meta Quest 1 VR headsets were set up and made available for students during the fall semesters of 2024 and 2025. Access to the headsets were offered on two days during the fall semester of 2024 with one day the headsets offered in a classroom setting and another day the headsets offered at the on-campus equine facilities. Advertisements of the VR equine interaction opportunities were done through classroom announcements and fliers posted across the campus. The following fall semester the headsets were made available one day at the on-campus equine facilities. Similar recruitment efforts were utilized as that in the fall semester of 2024 along with the implementation of postings on social media. For all VR equine interaction

opportunities, there were no restrictions concerning student participation. In addition, no restrictions were given concerning length of time utilizing the headsets.

Results to Date/Implications

During the fall semester of 2024, 17 students participated (6 male students, 11 female students) in the VR equine interaction offered within a classroom setting on campus and another 14 students participated (4 male students, 10 female students) in the VR equine interaction offered at the on-campus equine facilities. In the fall semester of 2025, 9 students participated (2 male students, 7 female students) in the VR equine interaction at the on-campus equine facilities. Scheduling associated with classroom availability restricted offering of the VR equine interaction in a classroom setting during the fall semester of 2025. While students were allowed to participate in multiple VR equine interaction events, all student participants engaged in only one event. Time spent using the headsets ranged from six minutes to 42 minutes. Those students participating in the classroom event utilized the headsets for no more than 15 minutes. Negative feedback concerning the experience that was consistent across the three events included the weight of the headsets. Students that came to the event and did not participate cited the headset would negatively impact hairstyle. Dizziness was reported only for a student at the classroom event. For the equine facilities events, students noted cold weather as a negative aspect of the event. Those events were held in an open-sided covered arena. Despite these negative points, all participants noted improved emotional state after completion of the VR equine interaction.

Future Plans/Advice to Others

Pending funding approval, the goal is to acquire additional headsets so that more than two students could participate at one time. Although each event was offered throughout the afternoon on the days of the event (from noon till 5 pm), students that had to wait for a headset were discouraged and left. Additionally, the headset battery life did not last the entire afternoon, thus, additional headsets would allow for battery charging. Further, the newer headset is a lighter weight than the older model. The other recommendation from students was offering multiple days during the semester both at the equine facilities and within the classroom setting. As noted by student participants, flexibility in scheduling would facilitate participation including offering events in the spring semester. Likewise, the equine facilities offered the advantage of not having restrictions concerning parking, but a more centralized location on campus would be preferred according to students. While the classroom allowed for temperature control, sounds from adjoining rooms and the hallway were noted as distractions by student participants. On the other hand, the sounds at the equine facilities facilitated the equine interaction experience according to student participants. As such, a soundproof classroom is being identified for future events. These considerations outlined within this abstract are recommended for other programs.

Costs/Resources Needed

Both the GoPro HERO 10 camera and the Meta Quest 3 VR All-in-One headset set, which is the newest version of the VR system, can be purchased for under $350. As observed by the authors, a minimum of two VR headsets is needed and additional headsets are recommended. Currently, no replacement accessories have been needed for the VR headsets utilized, however, with repetitive use, accessories including headset straps and foam replacements along with joystick covers may be required in which bundle sets for accessories can be purchased for under $50. Indirect costs include equine facilities and classroom.

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