

Evaluating VR crisis training for university housing student staff

by

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Abstract

This study examines the effectiveness of virtual reality (VR)–based training in enhancing resident assistants' (RAs) learning, confidence, and preparedness within university housing contexts. Grounded in Pine and Gilmore's (1999) Experience Economy Model, the study explores how the educational, entertainment, escapist, and esthetic realms shape engagement with immersive training. The study uses a VR simulation of a cannabis policy violation scenario, followed by qualitative interviews, to reveal that participants perceived VR training as highly engaging and effective for improving knowledge retention and procedural understanding. The educational and entertainment realms emerged as the most prominent, while esthetics elements were identified as an area for improvement. Participants also emphasized the value of VR as a complement to traditional training methods rather than a replacement. Overall, the study highlights the potential of VR to create interactive, low-risk learning environments that support more effective student staff training practices.

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Introduction

University housing departments depend heavily on their live-in student staff - often called resident assistants (RAs) - to maintain safe and supportive spaces within their residential assignments (I.e., residence halls, apartment-style housing, etc.). RAs serve as the primary responders to their residents, handling a wide range of situations, from interpersonal conflicts such as roommate disagreements to urgent crises like mental health concerns or policy violations. Beyond crisis response, RAs play a crucial role in fostering community within their assigned floors and buildings by helping residents navigate university life. Due to the multifaceted nature of the job, RAs are expected to develop a variety of skills and be prepared to navigate a range of scenarios (Sharma et al., 2015; Sacks et al., 2013).

To prepare them for these roles, most higher education institutions implement intensive training programs that begin before each academic semester. Fall training, especially, can feel hectic as new and returning student staff are introduced to topics ranging from crisis intervention to community-building strategies, often delivered in lecture-heavy formats condensed into one to two weeks. In addition to the content, training seasons are usually long with 9-5 schedule-type days leading to rapid pacing and cognitive overload that risks skill development (Lohre et al., 2020; Mühling et al., 2025). These training conditions may hinder RAs' readiness and information retention, especially for mid-year hires who are expected to integrate into existing communities halfway into the school year.

Emerging literature suggests the successful implementation of extended reality (XR) technologies in training programs across a variety of fields, including healthcare, education, and construction. Virtual reality (VR) tools have been shown to improve participants'

knowledge retention, performance accuracy, and better real-world task preparedness (Lindner et al., 2025; Narciso et al., 2022). Additionally, these immersive environments allow trainees to practice complex simulated crises without the risk of external components, while also offering the unique advantage of immediate feedback and repetition rarely seen in traditional workshops (Bieg et al., 2022; Li et al., 2025).

Despite the robust literature on the successful implementation of VR-based training, the field of student affairs is slow to follow suit, particularly in the housing sector. Integrating VR components to RA training can help bridge the gap between theory and real-life application by providing realistic crisis response scenarios, such as substance use and roommate conflicts. The Pine and Gilmore (1999) Experience Economy model will be used to highlight the effectiveness of experiential learning combined with educational and entertainment elements that will maintain engagement, skill retention, and readiness.

Therefore, this study aims to explore the use of VR-based simulations in training programming for housing student staff. The project examines the potential of immersive VR scenarios to enhance confidence, preparedness, and knowledge retention among RAs, compared with traditional lecture-based training. Thus, this study intends to contribute to the field by addressing experiential learning and practical improvement of VR-based training for student staff training in the housing sector.

Review of the Literature

The Experience Economy Model

Pine and Gilmore's (1999) Experience Economy Model proposes four interconnected realms to provide effective experiences: educational, entertainment, escapist, and esthetic. This model examines varying levels of participation (passive vs. active) and immersion (absorption vs. immersion), offering a framework for understanding how individuals engage with and learn from experiences. Esthetics (passive) refers to how inviting the atmosphere that is created in an environment is. Escapist (active) looks at how immersive the activities in an environment become. Educational (active) focuses on creating engaging outcomes that foster knowledge and skills. Finally, entertainment (passive) looks at how to keep guests entertained by creating fun and enjoyable experiences. Pine and Gilmore (1999) highlight that a guest can engage with multiple realms simultaneously, fostering deeper engagement and meaningful learning. Scholars such as McClellan (1999) have discussed the application of the Experience Economy Model to digital learning environments, arguing that emerging technology can offer a unique multi-realm experience that strengthens learning outcomes.

The Economy Experience model in XR-based Training

Pine and Gilmore's (1999) model provides a strong theoretical foundation for examining how XR-based training can be beneficial in university housing contexts. RAs are introduced to high-risk environments where decision-making, composed responsiveness, and procedural knowledge are essential. Traditional training methods might not fully engage learners, especially in the context of printed case studies. Utilizing VR simulations can help bridge this gap by engaging RAs in the various realms of the Experience Economy Model. In addition, VR simulations allow for a cooperative experience between the four realms. As the study focuses on

improving the RAs' training practices and knowledge outcomes, it will primarily examine the educational and entertainment realms. Utilizing the scenario-based learning from the educational realm and the dynamic, engaging content from the entertainment realm will give RAs more engaging training experiences with long-lasting outcomes. The Economy Experience model allows for XR to be placed as an effective training tool across a multitude of fields. Using this model helps justify the focus of the study and provides the framework for interpreting how VR-based training may enhance knowledge retention, scenario readiness, and confidence.

XR Potential in Educational and Training Efforts

Extended reality (XR) is an umbrella term encompassing virtual, augmented, and mixed reality, and has emerged as an innovative training approach across a variety of professional domains that require quick response and strong decision-making skills. These immersive tools allow for experience-based learning environments that promote engagement, skill retention, and real-world application. In particular, VR can create dynamic simulation opportunities that mirror realistic job settings and hands-on experience while maintaining a sense of safety (Bieg et al., 2022). Compared with traditional learning formats (E.g., lecture-based, text-based), VR training allows participants to remain active and enhances self-efficacy and preparedness for high-pressure work tasks (Lindner et al., 2025).

This shift reflects the evolution of educational practices toward experimental, digitally mediated training that promotes active learning environments, realism, and immediate feedback. In many industries, XR tools have become effective alternatives to traditional lecture-based approaches, allowing for more dynamic and participatory training practices. McLellan (1999) explains that emerging digital formats are intentionally designed not only to convey information

but also to shape meaningful and engaging experiences that support stronger personalized learning outcomes.

High Stakes Scenarios Through Immersive Simulation

One area that staff training has aimed to improve with the use of XR technology is crisis management and its associated response. A growing body of research continues to explore how XR environments help simulate complex, high-pressure scenarios, especially in the healthcare field. In healthcare settings, VR emergency simulations have been shown to significantly improve procedural performance, skills retention, and learner confidence when applied in real-world environments (Bieg et al., 2022). Similarly, VR-based clinical competency assessments show comparable or sometimes even more effective outcomes compared to their physical counterparts, while simultaneously reducing the long-term resource burden that comes with traditional simulations (Mühling et al., 2025).

Furthermore, the results of Li et al. (2025) showed similar outcomes when the study's VR group scored higher on the on-site assessment, triage accuracy (using the START model), and transportation decision-making. Additionally, the students in the VR group reported greater satisfaction, better understanding, and greater levels of confidence in handling future real-life emergencies. Lohre et al. (2020) compared immersive virtual reality (IVR) to traditional video-based training, focusing on potential improvements in orthopedic surgical skills and knowledge. In addition to speed, IVR training significantly improved technical skills and anatomical knowledge compared with the control group and demonstrated long-term cost-effectiveness. As such, VR learners have been shown to complete tasks faster, perform more accurately, and feel more confident than those trained with video-based or lecture-based instruction (Li et al., 2025; Lohre et al., 2020).

Similarly, studies involving firefighter training show that VR generates physiological stress reactions (i.e., changes in heart rate) similar to what would be expected in real emergencies. As stress management is also an important element of emergency response readiness, VR training can support emotional and behavioral transfer to on-site response (Narciso et al., 2022). Moreover, VR learning environments improve long-term knowledge retention, exposing trainees to stressful, time-sensitive decision-making without involving live scenario risks (Lindner et al., 2025).

Training for Risk Awareness and Response in Virtual Environments

Beyond the successful implementation of already mentioned fields, XR has also proven valuable in professions such as construction and university evacuation training. For example, Sacks et al. (2013) explored the use of VR to create a construction site simulation that will help construction worker trainees identify and assess risks on-site. The study separated 66 subjects into two groups; half of the subjects were used as a control group and received traditional classroom training, while the other half used 3D immersive VR technology. The results of Sacks et al. (2013) show that there was a significant advantage to using VR training for stone cladding work and cast-in-situ concrete work. Furthermore, VR training allowed trainees to be presented with hazard situations directly without compromising their safety and was more effective in terms of keeping trainees engaged.

Furthermore, Sharma et al. (2015) developed a multi-user virtual university campus using a VR-based Immersive Collaboration Virtual Environment (ICVE) that allowed participants to experience campus tour navigation to facilitate virtual evacuation drills and campus tour safety. The study used Unity3D and Photon Unity Networking to create a multi-user 3D campus model with avatars, evacuation scenarios, and a virtual tour exploration model. Results

showed enhanced understanding, safety awareness, and ease of use. Results by Sharma et al. (2015) showed that the ICVE model not only allows for non-disruptive and cost-effective drills but also enables access to remote users and newcomers to engage in low-risk training environments.

Lack of XR Integration in Student Affairs Training

Despite XR's success across multiple disciplines, there remains a noticeable lack of research in applying these immersive tools in the field of student affairs, particularly in the university housing setting. Student staff in housing positions are often responsible for critical roles that include emergency response, community management, and conflict mediation. Despite their center positions in such engaging tasks, their training still largely depends on traditional modes such as lectures, handbooks, or scripted case studies/roleplays. These traditional methods are no longer sufficient, and fall short, in fact, when it comes to preparing students and staff for the unpredictable and ever-changing incidents that real life offers.

It is because of this evident gap that this study seeks to examine how XR tools could be integrated into student housing training to enhance critical areas such as knowledge retention, confidence, and levels of preparedness among the RAs. By leveraging insights into the successful implementation of XR in other high-responsibility fields, this study proposes the implementation of VR-based scenarios to be included in student affairs training models, specifically housing, to enhance the RAs experiences and improve learning outcomes.

Research questions

The literature above reviews an extensive body of knowledge addressing the strengths of implementing emerging technologies, particularly VR, to improve training practices in a variety of fields. The premise of this study intends to implement existing literature and the Experience

Economy Model into a new field, higher education university housing. Given the novelty of the approach, the study proposes the following research questions rather than formulating predictive hypotheses:

1. What role does VR-based training play in supporting RAs' learning, confidence, and preparedness?
2. To what extent do RAs feel VR training enhanced their learning outcomes compared to traditional training methods?
3. What characteristics of the VR training environment shape how RAs engage with crisis-response content in relation to the Experience Economy Model?

Methodology

This study implemented a pilot VR-based training module to recreate common real-life scenarios RAs might encounter whilst in their communities. Scenarios allow RAs to walk through common crisis scenarios while isolating some of the stressors that occur from big group discussions. The purpose of this method is to examine the influence VR training might have on RAs preparedness, confidence, and decision-making when encountering incidents.

Design

This study used a combination of an experiential VR-based module along with follow-up qualitative interviews. By combining these two approaches, the project is able to measure perceived changes in preparedness and knowledge retention as well as the participants' reflections on interacting and learning with the VR simulations.

One VR scenario was developed using the Wonda VR platform that mirrored a common incident RAs frequently encounter, yet continue to have questions regarding its procedure.

1. Cannabis Policy Violation

- a. Cannabis in housing property is not only a violation of the housing handbook but may also result in higher illegal possession, depending on the state. RAs may struggle to recognize when to call Senior Staff on Call (graduate or full-time level), the police, etc. Additionally, when presented with this situation, RAs hesitate in knowing which questions to ask the respondents involved. This scenario aims to help RAs identify violations, determining when to involve Senior Staff, police, etc., as well as help them Focus on procedural judgment and confidence under pressure.

The scenario was self-paced and designed to mimic real-life cues found in residential settings.

Participants and Sampling:

The desired sample was 3-6 mid-year hires, as they are typically selected based on the community's hiring needs. These hires receive a much-condensed training schedule beginning in January and enter their new positions with little preparation, making them an ideal group for the pilot study.

The final sample included six first-year RAs hired by the Kansas State University Housing and Dining Department. The study used convenience sampling and was conducted once departmental approval was granted. Due to external factors, the testing did not occur during January training but rather during the first few weeks of the Spring semester. Participation was voluntary and in no way influenced participants' employment status. Participants had to be at least 18 years old at the time of participating in the project.

It is important to note that the experiment was conducted during the Spring semester, at which point the participants had already been in the job for a full semester. Responses might differ from those of people who are new to the job and interacting with an incident simulation for the first time.

Instrument:

Wonda VR Training Platform

One VR simulation created with WondaVR that mimics a common scenario RAs frequently encounter will serve as the primary intervention.

The participants used their own computers and headphones to ensure familiarity with the device on which they launched the experience on.

Creation

The VR experience consisted of four main scenes and three main characters the participants could interact with. While the module was created using the platform WondaVR, the characters in the space were programmed by the researcher and generated using Artificial Intelligence (AI).

- Welcome Scene: introduced the participants to the space and a short introduction to what the scenario will be.
- Instruction scene: This scene includes instructions on how to navigate the space and notices of the scenario.
- Cannabis violation response scenario: The virtual scenario participants navigated to respond to a cannabis violation incident. Participants had the ability to move freely throughout the space and talked to the characters.
- Exit scene: This scene congratulated participants for completing the module and indicated they can close tab or try again.

Characters:

- Student: Called to report the smell. Waiting in the lobby for RA to arrive.
- SSOC (Fernanda): Ready to support RA and offer guidance on how to handle the situation.
- KSUPD Police Officer: Called to the scene after receiving note of smell of marijuana. He has two modalities; one where he will not be able to pinpoint the smell to a room; and another where he will pinpoint the smell.

Follow up:

After initial VR training was completed, individual semi-structured interviews were scheduled for follow-up assessment of the experience. Interviews happened about a week after

the initial training had been received and lasted about 20-30 minutes. The questionnaire included a total of 41 questions targeting the four Experience Economy Model dimensions [educational (6), entertainment (5), escapist (5), esthetics (4)]; perceived readiness, information retention and confidence (10); and demographic information (11). The responses were then coded by the researcher and divided into the categories above. The interviews were audio-recorded with the participants' consent. The interview instrument was created by the researcher, supported by McLellan's (1999) interpretation of the Experience Economy Model realms.

The experiment was approved by the University's Institutional Review Board (IRB), protocol number IRB-13495, to ensure ethical human-subject research practices.

Below are Figures 1-4 that show the makeup of the scenes before the practice scenario as well as the ending scene. The 360 pictures were taken by the researcher from a residence hall on campus.

Figure 1. RA Cannabis VR Training Welcome Scene

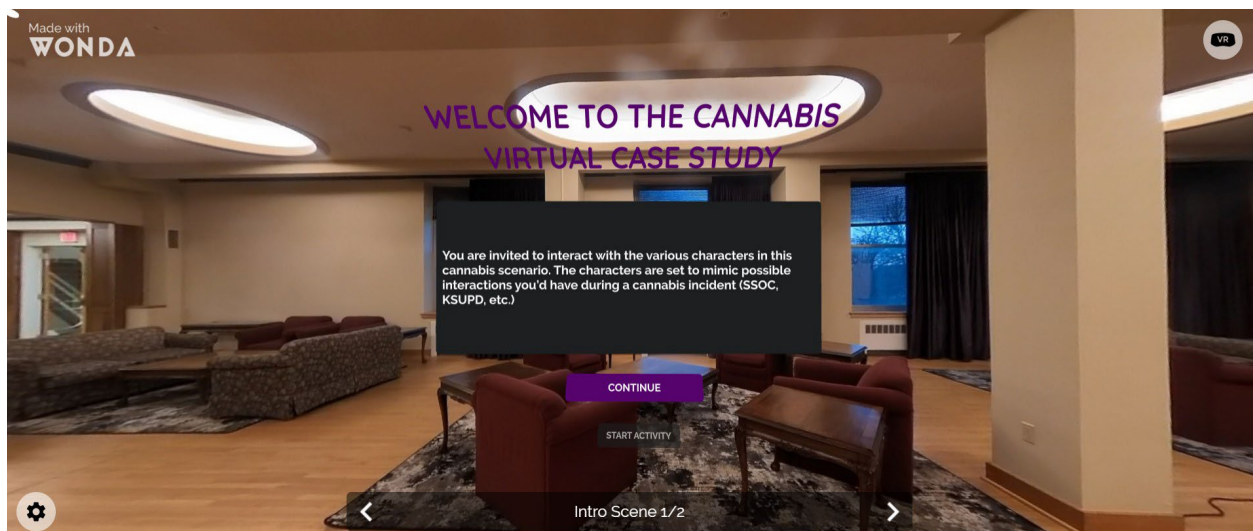


Figure 2. RA Cannabis VR Training Instructions Scene

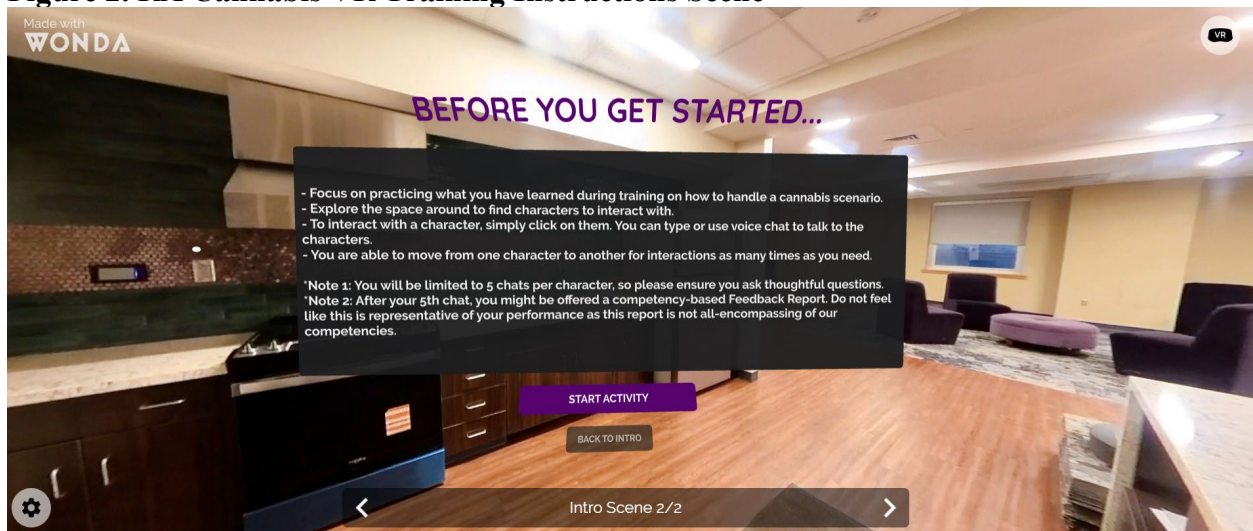


Figure 3. RA Cannabis VR Training Scenario

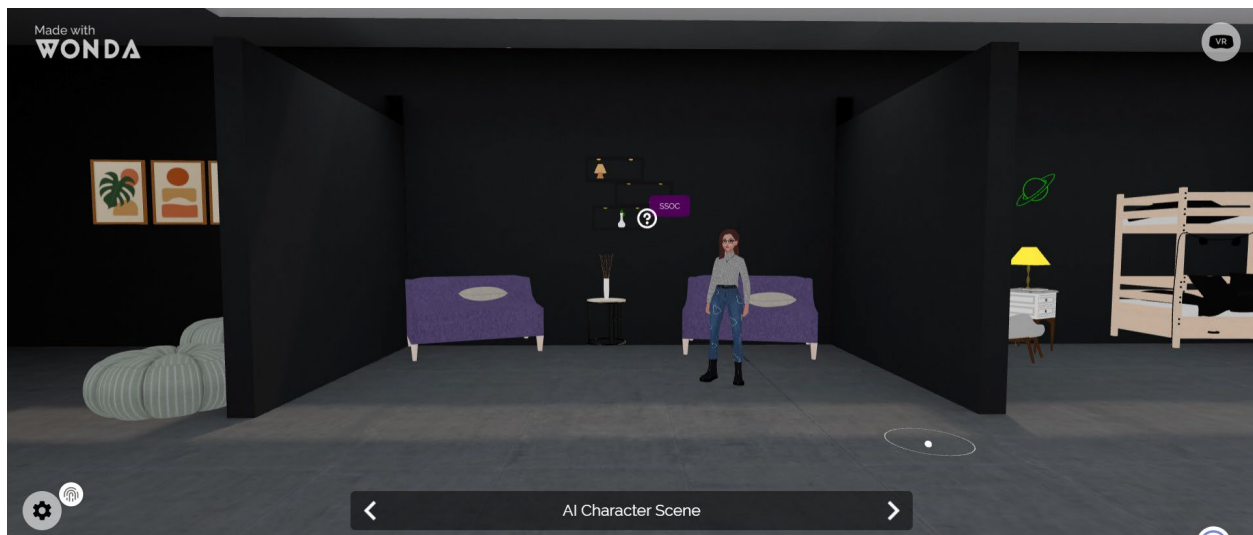
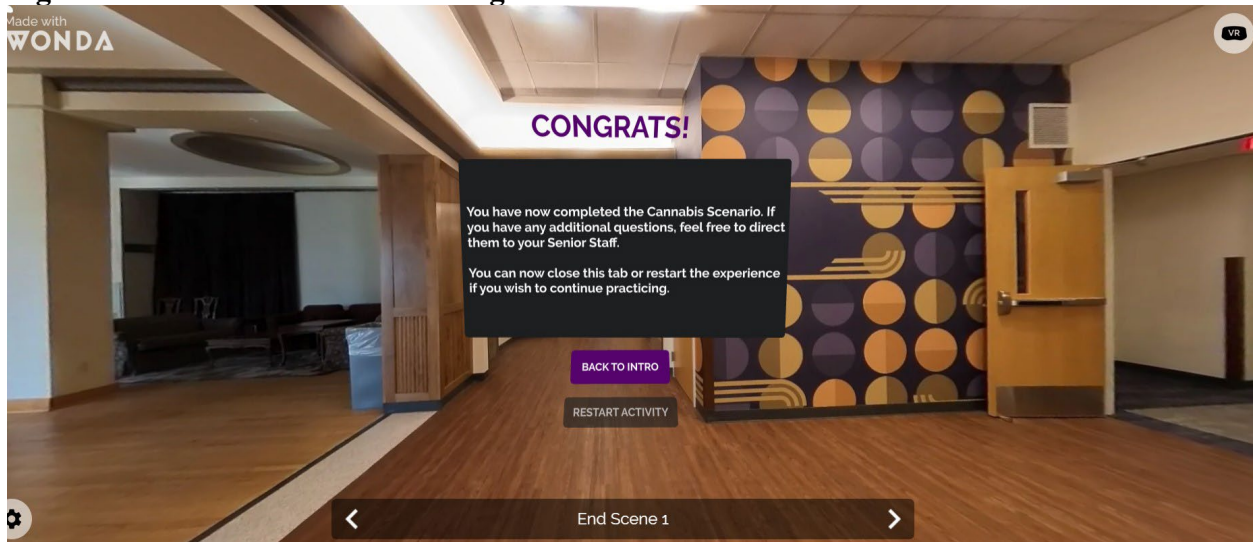


Figure 4. RA Cannabis VR Training Exit Scene



Results

General Findings:

The experiment was conducted on February 3, 2026, with all six participants completing the module individually in the same room. The experiment lasted less than 30 minutes, with the last person finishing up the module around the 20-minute mark. Table 1 lists the demographics of the six participants who completed the training and follow-up semi-structured interviews.

Table 1: Demographics of the RAs participating in the study

Participants	Age	Year in school	Semesters in the job	Gender identity	Race/ ethnicity
A	21	Junior	2	Nonbinary	White
B	19	Sophomore	2	Female	White
C	19	Sophomore	2	Male	White
D	20	Sophomore	2	Female	White
E	21	Senior	2	Male	White
F	20	Junior	2	Female	White

Qualitative analysis of the transcripts revealed five overarching themes in terms of perceived benefits of VR training.

Interactivity and individualized experience

Many participants indicated enjoying the individual training aspect that the VR module allowed for. Participants mentioned being able to practice how they would react to an incident in a separate environment from the traditional big group role-playing, in which each RA was

assigned a role. “What's nice about this is that everyone gets their own experience in VR for how they would play it out, as compared to role-playing,” Participant C said. The participants mentioned that this type of training can help student staff ease into the crisis response aspect of the position. VR training allowed the participants to feel comfortable while practicing going through the response steps. “But actually, doing what they told you to do, because sometimes it's more comfortable for someone to do it online than having to go and awkwardly roleplay it in front of Senior Staff... That’s why I think it could be more comfortable. Especially for those who aren't okay with stepping up in front of people to try, and act it out, or walk through the situation,” Participant B explained. Another participant added that this type of training can help people feel less anxious by getting a preview of what this incident might look like. “You're able to put yourself in the situation, and I feel like that would definitely alleviate a lot of people. Because I know there were a lot of people who were just very anxiety high, because they're like, I don't know what I'm stepping into.” The participant then added that this is an opportunity to interact with a crisis scenario in a low-stakes environment before jumping in to respond in person. “Giving you that low-stakes chance to interact with the situation before going into a situation where you're feeling a little bit more high-stakes” (Participant E). This point was further reinforced by another participant stating that the VR module was a better learning opportunity to go through the steps individually in an environment with less pressure. “I think maybe not necessarily new or different, but I would say I feel like I learned better just because it was an easier opportunity for me to be able to be the one doing it. And so, I was fully engaged because I was doing it, but it's not high-stakes. It's not actually happening,” Participant D said. Thus, most participants showed positive feelings towards the freedom of interactivity and individuality of practice that the VR training module allowed for.

Increased engagement

The second overarching theme is increased engagement, with the participants noting that the module was engaging to them and that they enjoyed the game-like aspect the VR training provided. One participant noted that immersing themselves in the experience and characters helped increase their engagement. “There's something about putting headphones on and feeling like you're playing a game that's a lot more engaging. I like that the characters talk to you” (Participant A). Many mentioned learning better while completing hands-on activities, and the module supported this style of learning. One participant noted that this type of training promoted active engagement and entertainment to otherwise tediously long days. “I thought it was a lot more engaging. It's kind of, I don't know, it's supposed to be a simulation I know, but it's kind of like a game, and so that's always entertaining in training and stuff.” The participant added how the VR training can help sustain engagement by providing other active learning opportunities. “I always find myself most engaged if we end up doing a Kahoot or have an activity or something instead of just being lectured at. So, I think this is another really good way to implement that,” Participant D said. Another participant mentioned liking not only the game-like nature of the module but also the challenge of putting the pieces together to solve the puzzle. “I found it quite a bit more engaging than case studies and lecture style. And it is kind of built on that gamify aspect. The puzzle aspect of going to the different people to gather the pieces and then being able to put it together.” The participant also included the range of learning styles VR training can offer to increase knowledge retention but also discover how the program itself works. “I also enjoyed a little bit of the, just novelty of a different way of learning, like the interface itself,” Participant E said. The participants' responses in this section highlight how engagement and

immersion in activities can result not only in greater enjoyment during training periods but also make learning outcomes more attainable.

VR training seen as good complement to traditional lectures

Most participants agreed that VR can complement traditional student staff training. Across all interviews, participants agreed that receiving key information in a lecture style is necessary to learn the ins and outs of the job. The participants said that VR training can then be used to solidify information learned during lectures and provide RAs with a training tool they can use in later sessions to practice. “I think that [VR training] has you put yourself in the situation mentally and then, traditional training backing it up... I feel maybe doing the VR training before we do behind closed doors or something like that” (Participant E). Implementing VR training in smaller groups or individual practice to apply the information learned during the big lectures would be a good way to further strengthen knowledge of retention. “I think after somebody tells you how to walk through the steps, then having that VR of like, okay, now you do it. Because we don't really get to do that. Except for behind closed doors (roleplaying),” Participant A said. The participants expressed that this hybrid way of training will help in retaining the information learned by then applying it to a practice scenario. One participant mentioned that after practicing with the VR module, there should be some sort of big group discussion to strengthen the information learned and practiced. “So, you do a little bit of traditional lectures like, okay, these are kind of the steps you want to take VR to introduce you to those steps and then more traditional [roleplaying] after to further solidify those,” Participant C said. Another participant said both styles of training should be present to help RAs not only absorb the information but also visually walk through and act out what they learned. “I honestly think it should be more 50/50 rather than part of it, most of it being lectures and another part

being role play. Because again, I feel like people really learn best when they're actually put in the situation themselves, they feel more prepared,” Participant F commented. While there was some variety in responses on which type of training should go first, most participants agreed that both styles of training can be useful. The responses give insight into what the future of student staff training can look like with the help of VR training. Rather than one overpowering the other, both traditional and VR training methods should work in harmony to create a holistic learning experience for the RAs.

Improved information retention

On the side of information retention, participants mentioned having liked being able to visualize or walk through the steps, allowing them to better understand how the incident should be handled and even helped them feel more prepared to respond to incidents. One participant mentioned how the VR training helped them feel more prepared for similar incidents in the future. “And, so it's nice to be able to be, especially if I were to go into a scenario like that, I might even be like, oh, I've done this before. And so, I thought that was good. And it's easier to, sometimes it can be hard to listen in the lectures and be able to remember all of that so you can apply it.” This participant added that the training might be transferable to other incidents as well. “I think, well, number one, getting that police report number important, but I think it would be just translate to being, I might be just a little bit more confident in being able to be like, okay, I just need to talk to the residents and get the information and then bring that information to the police and that sort of thing. I think just in general, I would be able to respond a bit better” (Participant D). Another participant pointed out how the module supported interactive ways of learning in which hypotheticals can be resolved by an individual going through the steps themselves. “I would say definitely just putting you in there and being able to, it helped me kind

of learn the same ways that I learned whenever I was put in the situation for that, which kind of makes it better than the case studies. Because for those ones, they say, ‘How would you handle that?’ But you don't actually see it in your mind. Having that aspect a bit of what senior staff might say to you, whenever you call them, too,” Participant E said. The results in this section show how VR training can be a driving force in supporting RAs’ readiness and confidence by allowing them to interact with the experience themselves, resulting in higher feelings of preparedness to handle a cannabis incident or similar incidents.

Vehicle for important reminders

Interestingly, the results found that one of the main pieces of new information/reminders participants got from the experience was asking for the case number from the police officer. A case number is created when the police respond to an incident in the residence halls. If the police do not find a violation (in this case, marijuana in the building), the RAs can still receive a call number for their incident report. “I thought it was a good, first of all, it was a good reminder of getting the police case number. I've never really dealt with the police by myself before. And so, when he was like, ‘Do you want the case number?’ I was like, oh my gosh, yes, I do. I need to remember that,” Participant D said. Another participant said they thought it served as a good reminder of a part of crisis response that is not often talked about “I don't know that, we necessarily went over that, oh you get a case number from the police. So that was also good” (Participant E). This point was further reinforced by Participant F, who said, “Yeah, because I didn't even know you had to get the case number from the cop, so.” This can be due to lack of practice with cannabis or similar scenarios where the police are involved. Another potential reason can be due to fall training occurring in August, and some of that information being lost throughout the school year. Nevertheless, the results show how VR training can assist in

alleviating some of that disconnect by allowing RAs to practice procedural steps outside of scheduled training times.

The interviews also addressed limitations of the VR training scenarios or their execution. The qualitative analysis of the transcripts revealed several suggestions for improvements, reported below.

Possibility to call for characters, as in real life

One of the main areas of improvement the majority of the participants wish to see in the future is having to *call* for the characters instead of them already being in the space. One participant highlighted that finding a way of “calling” for the people would improve the training. “It would be cool if maybe there was like a phone, and instead of walking to the person to call them, you actually call them, and then they appear. That might be fun. Because the whole time you see every single person, so you're like, okay, well I'm going to start with the resident, then I'm going to go to Senior Staff and I'm going to go to KSUPD... [and] if the officer was going to investigate, maybe he doesn't walk away, but he's just not in frame anymore or something,” Participant A said. Another participant added that calling for people or having them appear later can help with visualizing the flow of information better. “Yeah, having the people not there or having to ask for them to come. I think you could start with just the resident there,” Participant B explained. Many participants also noted potentially including other residents in the space who might be curious about the situation at hand. “Change the people are maybe other residents who are trying to watch the police. Yes, because that's regular,” Participant B shared. A real-life incident in the residence halls would include not only the people responding, but also residents of that community approaching the scene or asking questions to the staff. The participants

highlighted how this is an integral part of on-call response and would like to see that represented in future VR modules.

More guidance on how to navigate the scenario

Additionally, while the participants were engaged and curious while performing the VR module, many expressed confusion about how to move on to the next scene or by the lack of a clear ending to the scenario. One participant noted that the order of progression happened quickly, and the ending felt somewhat abrupt. “Say it was a little bit confusing just because I felt like it was really fast and It didn't feel like there was necessarily a clear end. It was just like I was, oh, am I done,” Participant D said. Another participant said that the lack of clear ending made it difficult to know when to exit the module. “I think trying to figure out what was the ending, figuring out where to end, just kind of some of those things that I wasn't as certain about, from the directions or something like that,” Participant E shared. The insight from the participants shows that the navigation of the scenario itself was not an issue, but rather the participants would like to see more guidance in navigating the space seamlessly.

A warmer, brighter space

The participants shared having liked the details in the experience, such as the furniture, wall art, and design on the characters. However, some mentioned that the space itself was dark and not as colorful as the inside of a residence hall. One resident mentioned that the colors of the walls did not match what can be seen in the residence halls. “It was very gray. It's very blue and gray. I'm in [Residence Hall 1] yeah, it's not very blue, gray. I think that the resident rooms were realistic if they were doors...Yeah, it was void-ish. I felt like I was in the void,” Participant A said. Another participant added that there should be more division between the rooms in the space, adding that an RA would normally have to knock on a door or walk down the

hallway to get a better look at what's ahead. "I think it'd be better if it were like, you could see the hallway at least to go down, even with doors. I think some of the walls could have been more not necessarily engaging, but I feel like a lot of it was very dark..." The participant also noted that the space lacked the "liveliness" of a residence hall. "And so just more colorful, or fun, because I feel like most of our lobbies are chaotic and crazy. Or something's happening or furniture's all over the floor," Participant B shared. Finally, one participant specified that the characters were detailed enough to remain engaged, but the space itself did not coincide with their image of a residence hall. "At least for me, I didn't really recognize it too much a space within the [a] certain residence hall... I think that people like definitely did, having gone to different areas to talk to them. But maybe the other halls would look a little bit more like that. But [not] for me, knowing [Residence Hall 1], especially the walls being a dark color," Participant E said. Overall, these responses highlight the importance of creating an environment (esthetics realm) that matches the expectations of the participants engaging with the space to ensure full participation.

Outliers

Most of the participants felt the VR training contributed to their learning and overall preparedness in one way or another. However, the responses below represent a minority of participants that did not find themselves immersed or invested in the module at higher levels than they would expect from traditional role-playing.

First, one participant said that they find activities that require "imagining" difficult, stating that they walked through the experience not as the one responding, rather as controlling the character of the game, acting as a "puppeteer" of sorts. "No, I'm also not that kind of person. People are like, 'close your eyes and imagine.' I can't imagine, that doesn't work in

my head, so I think kind of the same way for the VR. I will look at it as if I felt like I was making someone else respond more like I was controlling an RA, so like if there's an imaginary RA right there, I was telling them what to do and what to say,” Participant B shared.

Another participant noted the experience did not necessarily offer additional immersive opportunities than what is seen in traditional role-playing opportunities. “I feel like I personally would get a better reaction from the role-playing in person. I feel like it's very comparable to just in-person role play, where you have another RA next to you, and you just kind of work it out together.” The participant then said that any form of training feels like a burden, while noting that VR training piqued the participant's interest more than other types of training, which prompted participation. “Whenever my mind hears training, I internally groan, but I was curious about this one more. So, I was a little bit more engaged because I was like, what's going to happen with this because I'd never seen it before,” Participant C said.

These responses might allude to how different personalities or “mindsets” interact with the module and have an impact on the perceived outcomes VR training is expected to provide.

To answer RQ1, which asked what role VR-based training plays in supporting RAs’ learning, confidence, and preparedness, the thematic analysis revealed that, in the case of the cannabis policy violation scenario, the VR training supported all three outcomes: preparedness, confidence, and knowledge retention in different capacities. The results highlight knowledge retention and information recall as a major outcome, with participants’ ability to remember details of the procedural steps. Confidence was seen in the participants, indicating the VR module helped visualize how they would approach a similar real-life situation. Similarly, the participants noted that having gone through the module made them feel prepared to tackle similar incidents, as it allowed them to feel they had experienced the scenario before.

RQ2 asked to what extent RAs feel VR training enhanced their learning outcomes compared to traditional training methods. The analysis revealed that the participants found the VR training extremely helpful to their learning and engagement but noted that the module should be implemented in future training as a complement to traditional training rather than a substitute. VR training can serve as reinforcement of information learned during lecture-based sessions through interactive, individualized practice. This way, the trainees can still receive the knowledge required to fulfill their role and further understand the material with hands-on practice.

Finally, RQ3 asked what characteristics of the VR training environment shape how RAs engage with crisis-response content in relation to the Experience Economy Model. The thematic analysis indicated that interactivity and individualized practice, increased engagement with the VR training, VR as a complement, improved knowledge retention, and a vehicle for important reminders were the main themes that enhanced the participants' experience. In relation to the Experience Economy model, the entertainment realm was the most prominent, with entertainment as a close second. The participants enjoyed practicing procedural steps and dialogue, as well as liked the detail in the characters and the elements of the space (paintings, couches, etc.), which supported their experience. However, esthetics was the least prominent realm, with participants noting that the dark and less colorful building design did not resemble a residence hall. The findings highlight the importance of balancing all four realms to create a well-rounded experience.

Discussion

The participants' responses suggest that the VR training supported their learning, confidence, and preparedness. Starting with knowledge retention, the responses showed that the participants successfully retained information from the VR module intended for them to learn. Many of the participants remembered the procedural steps from talking to the students to receiving the case number from the police officer. Additionally, even if not directly stated, the responses showed that the participants remembered going through all the steps in the scenario and what the characters asked for. As for confidence, some participants mentioned the VR training helped them increase their confidence, saying the ability to walk through the steps helped them feel more confident to respond to future incidents, not only related to cannabis. However, a few participants said the VR scenario did not help their confidence due to having already experienced a variety of incidents at this point in the school year. Similarly to confidence, many participants indicated that the VR module helped them visualize what a similar scenario would look like in real life, increasing their sense of preparedness. The participants' responses suggest that the ability to interact with the VR training helped increase the sense of readiness towards the job and responding on-call. One participant in particular said that having walked through the VR training made them feel more prepared to tackle any upcoming incidents and approach them with a sense of having done a scenario like this from practicing in the module.

Secondly, the results indicate that the most prominent dimension of the Experience Economy Model that shaped the RAs engagement with the crisis-response VR training module was education. Many of the participants' responses demonstrated information retention either directly or laterally. Participants directly indicated ways in which the module helped them in learning or navigating a cannabis scenario such as being placed in the space,

practicing dialogue and visualizing procedural steps. Additionally, even when the participants did not explicitly say the VR module increased their learning, their responses showed greater comprehension levels. When asked what steps or procedures participants remembered the most, many participants were able to go through all the steps they took during the VR training, showing less direct but still successful lateral information retention. The least prominent dimension was esthetics. Many participants mentioned that the details in the space, such as the decorations, furniture, and characters, promoted participation with the VR training. However, responses indicated that the space itself was lackluster when compared to a real-life residence hall. Many participants pointed out that the walls of the environment were too dark, did not have vibrant colors, and were missing the “chaos” that exists in the residence halls. Ultimately, the educational realm was the most successful for the participants interacting with the VR module. This indicated great potential for the success of implementing VR for student staff training, as education is a desired outcome for training. Future modules should focus on modeling the space to mimic as closely to the residence hall as possible to ensure greater participation.

Participants indicated learning similarly or even better than with traditional training methods such as lecture-style sessions and in-person role-playing. Their responses revealed sustained engagement, driven by curiosity, the gamified nature of the module, and its entertainment value. The VR training helped participants visualize what a cannabis or similar scenario would look like while also allowing them to practice the procedural steps to follow. Some participants noted that they learn better through activities and hands-on opportunities, adding that the VR module provided an additional interactive training experience. While responses varied regarding whether participants took anything new or different from the

VR module, all participants were able to recall, almost step by step, the procedures they completed during the training. This suggests that visually interacting with a simulated scenario can enhance information retention, even if participants did not perceive it in the moment. Overall, responses demonstrated high levels of recall. In the future, a second round of interviews conducted about a month after the VR training could help compare longer-term information retention.

Theoretical and practical implications

By using student affairs training for its application setting and exploring the educational, entertainment, escapist, and esthetics realms of VR training to extract ways in which it can improve the RAs' training practices and knowledge outcomes, this study advances our understanding of the Economy Experience Model. The results indicate that, as predicted, the educational and entertainment realms feature most prominently in participants' answers. Consistent with prior research, the findings show that immersive VR environments can enhance engagement, knowledge retention, and preparedness through active, experience-based learning (Bieg et al., 2022; Lindner et al., 2025). Furthermore, the results suggest how VR-based training allows for low-risk practice for high-stakes scenarios that supports trainees' confidence and transferable skills (Bieg et al., 2022; Lindner et al., 2025). In line with Pine and Gilmore (1999), the findings highlight the importance of combining multiple experiential realms to create more meaningful learning outcomes.

From a practical perspective, the participants emphasized that VR training would be an effective tool when paired with traditional lecture-based methods, reinforcing content through interactive application. Additionally, responses highlighted the importance of implementing interactive and individualized ways for them to practice crisis responses in a meaningful way.

The results of this study also indicate that closer attention to esthetic details could make VR training even more effective if universities decide to adopt such styles of training. Overall, future implementation of VR into student staff training offers a more engaging and impactful approach that supports sustained learning throughout the academic year.

Limitations

This study had a strict time constraint for finishing the VR training module. As the experimental part of the study was originally scheduled to be tested during Spring student staff training (the second week of January), there was about a month to create and launch the scenario on WondaVR. Due to this, the scenario was created using the free version of WondaVR, which constrained the researcher to utilize all its functions to maximize the space.

This study used a convenience sample of six RAs from the same community. Feelings towards the VR training module might not be all-encompassing of RAs in different communities.

The coding process required an individual knowledgeable of university housing systems as well as media and communication research practices. Thus, the results were only coded by the researcher. While backed by this study's faculty supervisor, future studies should consider planning to retain coders with knowledge in both areas to ensure minimal bias and higher reliability.

Due to time constraints, this study used the free tier of WondaVR to create the virtual experience, therefore limiting the amount of creative freedom and permitted use of space. Future studies should consider using a higher tier to create well-rounded spaces.

Conclusion

Overall, this study demonstrates the potential of VR-based training to enhance RAs' learning experiences by promoting engagement, improving information retention, and increasing confidence and preparedness for crisis response. The findings suggest that immersive, scenario-based training allows student staff to actively practice procedural steps in a low-risk environment, leading to more meaningful and lasting learning outcomes. While VR was not seen as a replacement for traditional training, its value as a complementary tool was consistently emphasized. Future implementations should focus on improving environmental realism and expanding scenario complexity to further strengthen immersion and effectiveness. As student affairs training continues to evolve, integrating VR offers a promising approach to creating more dynamic, engaging, and impactful learning experiences.

Directions for Future Research

This study highlighted the importance of balancing the four realms of the Experience Economy Model to create a well-rounded experience. The results highlight the education realm, followed by the entertainment realm, as the most prominent realms identified in the participant responses. Future studies should focus on strengthening the realism and environmental elements of the experience to ensure full participation from trainees.

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Appendix A A.1Appendix B A.1

Appendix A - Interview Questionnaire

Appendix A.1. Interview Instrument

Introduction

1. Briefly share about yourself and your role as an RA.
2. How long have you been an RA?
3. How did it feel to begin your role mid-year/returning staff?
4. What do you find most fulfilling in the RA role? Most challenging?
5. How prepared did you feel to respond to incident procedures before training?

Educational

1. How would you describe your experience using the VR training scenarios?
2. Do you think you learned something new/different from the VR scenario compared to traditional lectures/case studies?
3. What steps or procedures do you remember most from the scenarios?
4. Do you feel the VR training helped you retain information compared to previous training methods? How so?
5. To what extent did the VR training clarify procedural steps (e.g., documentation requirements, points of contact)?
6. Did practicing what your dialogue help you become more confident in addressing conflict?

Entertainment

1. How engaging did you find the VR module compared to traditional training formats?
2. Did the engagement of VR help you better understand procedures?

3. Were there moments that felt fun, surprising, or particularly enjoyable?
4. Did that enjoyment translate into a sense of readiness towards the job?
5. How could the training experience be made more interesting or meaningful?

Escapist

1. How immersed did you feel while responding to the module? Did you feel a sense of autonomy in decision-making?
2. Have you applied any VR-based learning to real-world situations?
3. If a similar incident occurred tonight, how confident would you feel?
4. Were there distractions that pulled you out of it?
5. What changes would make the module more immersive?

Esthetics

1. How realistic did the VR environment feel to you?
2. Did VR help you better understand interactions with senior staff, KSUPD, etc., during similar incidents?
3. Did the visuals and environment make it easier to picture what an in-person scenario would look like?
4. What elements of the space or design supported your learning?

Outcome of Experience

Preparedness, Interpretation, Confidence, Decision-making, Future application

1. How does VR compare to typical fall/spring RA training (slides, case studies, roleplaying)?
2. Are there specific scenarios you think would be worth implementing into VR training?
3. Would you recommend VR modules for future RAs?

4. How do you think VR and traditional training can support each other?
5. What would you change or add to the VR module you experienced?
6. How prepared do you feel now to respond to crises in the role?
7. What part of responding do you still feel hesitant about?
8. Do you feel that VR supported your confidence and/or your knowledge of responses?
9. If you could design your “ideal RA training,” what role would VR play?
10. What advice would you give to the next group of RAs using VR training? What feedback do you have for the experience itself?

Demographics

1. What is your age (in years)?
2. What is your current year in school?
3. How many months/semesters have you worked as an RA?
4. Have you encountered any resident incidents since completing the VR training? Did you feel better prepared? (optional)
5. How do you identify in terms of gender? Female/ Male/Non-binary/Other
6. What is your race/ethnicity?

Appendix B - Interview Questionnaire

Appendix B.1. Consent Form

Institutional Review Board (IRB)
Informed Consent Template Form
comply@k-state.edu | 785-532-3224

PROJECT TITLE:

Evaluating VR Crisis Training for University Housing Student Staff

**PROJECT APPROVAL
DATE:**

**PROJECT EXPIRATION
DATE:**

**LENGTH OF
STUDY:**

PRINCIPAL INVESTIGATOR:

Raluca Cozma Professor, Media and Communication
cozma@ksu.edu

CO-INVESTIGATOR(S):

CONTACT DETAILS FOR PROBLEMS/QUESTIONS:

Fernanda Martinez, fernanda19@ksu.edu

IRB CHAIR CONTACT INFORMATION:

Lisa Rubin, Chair, Committee on Research Involving Human
Subjects, rubin@ksu.edu, 203 Fairchild Hall, Kansas State
University, Manhattan, KS 66506, (785) 532-3224

Brad Woods, Associate Vice President for Research
Compliance, 203 Fairchild Hall, Kansas State University,
Manhattan, KS 66506, (785) 532-322

PROJECT SPONSOR:

PURPOSE OF THE RESEARCH:

This study aims to explore the use of VR-based simulations in training programming for housing student staff.

The project examines the potential immersive VR scenarios can have in enhancing confidence, preparedness and knowledge retention among RAs in contrast to traditional lecture-based training. Thus, this study intends to contribute to the field by addressing experiential learning and practical improvement of VR-based training for student staff training in the housing sector.

PROCEDURES OR METHODS TO BE USED:

You will be invited to participate in:

1. VR training module consisting of two scenarios involving: a) A cannabis policy violation response, b) A roommate conflict interaction
2. Follow-up individual interviews about a month later lasting 20–30 minutes (audio recorded if permitted).

Data collection will be entirely anonymous and will not collect any personal information.
Participation will not affect your employment standing, RA evaluation, or access to departmental resources.
You must be over the age of 18 at the time of participating in the research.

ALTERNATIVE PROCEDURES OR TREATMENTS, IF ANY, THAT MIGHT BE ADVANTAGEOUS TO SUBJECT:

Not Applicable

RISKS OR DISCOMFORTS ANTICIPATED:

No anticipated discomforts.

BENEFITS ANTICIPATED:

This study does not have any direct benefits to you or other participants. However, participants may gain:

1. Increased confidence in navigating RA responsibilities
2. Additional practice with crisis decision-making
3. Greater preparedness for policy enforcement and resident support

EXTENT OF CONFIDENTIALITY:

All information collected in this project will remain confidential. Participant names will not be disclosed, and audio files will be stored securely, with only the researcher and principal investigator having access to them.

Identifiers will be removed from the identifiable private information, and, after such removal, the information could be used for future research studies or distributed to another investigator for future research studies without additional informed consent.

IS COMPENSATION OR MEDICAL TREATMENT AVAILABLE IF AN INJURY OCCURS? ☒ No

Terms of participation: I understand this project is research, and that my participation is voluntary. I also understand that if I decide to participate in this study, I may withdraw my consent at any time, and stop participating at any time without explanation, penalty, or loss of benefits, or academic standing to which I may otherwise be entitled.

I verify that my signature below indicates that I have read and understand this consent form and willingly agree to participate in this study under the terms described, and that my signature acknowledges that I have received a signed and dated copy of this consent form.

(Remember that it is a requirement for the P.I. to maintain a signed and dated copy of the same consent form signed and kept by the participant).

PARTICIPANT NAME:

PARTICIPANT SIGNATURE:

DATE:

**WITNESS TO SIGNATURE:
(PROJECT STAFF)**

DATE:

