Utilizing an Immersive Virtual Reality Activity to Teach Decision Making in an Undergraduate Team Leadership Course

Kenzie Bastian
Department of Agricultural Education and Communication
University of Florida

Dr. Laura Greenhaw
Department of Agricultural Education and Communication
University of Florida

PO Box 110540
341 Buckman Drive
Gainesville, FL 32611
(352)-294-6766
kenziebastian@ufl.edu

Utilizing an Immersive Virtual Reality Activity to Teach Decision Making in an Undergraduate Team Leadership Course

Introduction

Covid-19, by all accounts, forced higher education to shift to distance delivery. As a result, faculty have attempted to innovate and integrate new teaching methods as courses were moved online. In our class, Communication and Leadership in Groups and Teams, we sought engaging alternatives to face-to-face learning activities that allow students to practice skills and competencies through simulated experiences. During Fall 2020, student teams utilized an online escape room game to implement and evaluate group decision making.

How it works

TEG Unlocked is an online immersive escape room activity (The Escape Game, 2020). Escape rooms are ‘‘live-action team-based games where players discover clues, solve puzzles, and accomplish tasks in one or more rooms in order to accomplish a specific goal (usually escaping from the room) in a limited amount of time” (Nicholson, 2015). TEG Unlocked are self-led multiplayer problem-solving exercises students work together to complete. Students apply leadership, teamwork, and communication skills emphasized in course instruction. Previous research shows that learners who used an immersive virtual reality activity were more engaged, spent more time on the learning tasks, and acquired better cognitive, psychomotor, and affective skills (Jensen & Konradsen, 2018). In TEG Unlocked, teams must correctly decipher a series of clues to advance from one stage to the next until they achieve the overall goal of the game. Three different scenarios are currently offered by TEG Unlocked.

Students (N = 27) were assigned to teams during the third week of the semester based on self-reported interests and characteristics. Teams complete a self-selected project and several assignments over the course of the semester. Three teams consisted of four members and three teams consisted of five members. During week 11 of the full semester, students viewed an asynchronous lesson on decision making in groups and teams facilitated through the Canvas learning management system. The following class period was held synchronously online, where each team had 45 minutes to complete one of the TEG Unlocked escape games. Teams convened on Zoom with their assigned observer (an instructor or teaching assistant). The observer logged into the game, shared their screen and granted one team member remote access control to lead their team through the game. Following the activity, students completed a lab report reflecting on the decision making processes their team applied. Students were also asked to complete pre- and post-activity surveys so we could better understand the impact of the experience on student learning including students’ comfort with decision making and satisfaction with the activity.

Results to date/implications

Twenty-five students participated in the escape room activity and 23 submitted a reflective lab report. There was consensus among student reflections that the simulation allowed teams to practice decision making and problem solving. One student wrote, “Going forward and applying all that we learned about the importance of group decisions and how to best work

together while making big decisions under stressful conditions, I was blown away by how effective this activity was." Additionally, students were able to connect the experience with content from the decision making lesson. One student recalled the factors used to choose a decision making approach, writing, "This lab was useful because with every move between clues, information, and hints we worked as a team to make decisions quickly and efficiently. We had to carefully listen to one another, try out multiple options we had come up with, and overall created decisions that led us to succeeding. In the future when I work with other teams, I will look to consider the quality needed, speed required, as well as the level of acceptance required for each situation." Despite positive perceptions conveyed in the lab reports, satisfaction reported on the post-activity survey was mixed. Eleven students responded, with the majority indicating they felt the virtual experience was engaging (n = 8) and allowed for every team member to participate during the activity (n = 7). However, five respondents did not believe the virtual experience helped them live out the experience of decision making and all respondents felt their team would have worked better in a less virtual immersive experience.

Initial findings indicate that while students engaged in team decision making through the immersive virtual reality activity, they do not prefer this type of experience. Encouragingly, data indicate students connected the experience to decision making concepts taught, and derived meaning through practical application. This suggests that immersive virtual activities can provide effective experiential learning in team problem solving and decision making. TEG Unlocked and similar virtual escape room activities could be utilized in different settings where team decision making experience needs to be simulated, allowing participants to practice valuable skills including communication, decision making, problem solving, team leadership, creativity, and others. Leaders must possess or develop a set of diverse and complementary skills such as problem-solving, status-quo questioning, creativity, self-management and team leadership, among others, that are crucial for the organization (Alcaniz, Parra, & Chicchi Giglioli, 2018).

Future plans/Advice to others

We plan to implement a research design to explore the effectiveness of immersive virtual reality to teach leadership competencies. Teams should be given enough time to complete the entire game. In order to observe all the teams, we placed a 45-minute time limit to complete the full scenario. None of the teams successfully 'escaped' before time expired. We only purchased three game codes, so the activity had to be facilitated by allowing one team member remote control of the observer's computer. This presented challenges navigating screens and accessing information throughout the game. In the future, teams should be allowed to log directly into the game either with their own code or a generic login provided by the instructor.

Costs/resources needed

Game access codes cost $10. TEG Unlocked offers a discount for purchasing multiple codes, so we paid $28 to access all three games available. Games can be played an unlimited number of times. Two graduate teaching assistants and an instructor facilitated three student teams simultaneously. We dedicated one 50-minute class period to instruction on team decision making and one 175-minute class period to the activity. Group meeting software with screen sharing capability is necessary for teams to participate. We utilized Zoom.

References

Alcañiz, M., Parra, E., & Chicchi Giglioli, I. A. (2018). Virtual reality as an emerging methodology for leadership assessment and training. *Frontiers in Psychology, 9*:1658, 1-7. https://doi.org/10.3389/fpsyg.2018.01658

Jensen L., & Konradsen F. (2018). A review of the use of virtual reality head-mounted displays in education and training**.** *Education and Information Technologies*, *23*(4), 1515-1529. https://doi.org/10.1007/s10639-017-9676-0

Nicholson, S. (2015). Peeking behind the locked door: A survey of escape room facilities. http://scottnicholson.com/pubs/erfacwhite.pdf

The Escape Game. (2020). *TEG Unlocked*. https://store.theescapegame.com/collections/teg-unlocked