

DROWNING IN POVERTY: STUDENT LEARNING AND EDUCATION THROUGH SIMULATION

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ABSTRACT

Poverty simulations allow students, faculty, and community partners to engage mutually in important complex issues. Layering the development of such simulations within a disaster context allows further complexity while fostering professional development skills, social justice attitudes, and community knowledge. This article delineates the development and implementation of a poverty simulation exercise. Students researched and led seminars based on the social determinants of health model to understand the complexities and systems involved in preparing for and recovering from a disaster. Employing the experiential education model, the authors created an interactive learning environment that conveyed the relationships between poverty and disaster vulnerabilities in reflection of professional roles for students and simulation participants. Participant experience calls attention to a gap in emergency management curricula and partially fills it in through interprofessional and interdisciplinary community engagement.

INTRODUCTION

Whether it is personal discovery or learning in the field, experiential education starts with authentic problems and student engagement. This article examines the University of Akron's School of Disaster Science & Emergency Services *Poverty Simulation: Post-Disaster* course. The course provides two unique student experiences, the development and the facilitation of a poverty simulation. The authors developed a game-based community exercise to create an experience by which individuals and organizations can understand the challenges inherent to emergency management and homeland security. Students help communities build recovery, response, and resilience capabilities (Department of Homeland Security, 2020).

The University of Akron in Akron, Ohio, is home to over 13,500 undergraduates and almost 1,800 graduate students within the Cuyahoga River Valley. The course, based out of the School of Disaster Science & Emergency Services, with approximately 160 students in the program, can range from 10-20 students. The Higher Learning Commission serves as the institutional accreditor, and the International Fire Service Accreditation Congress (IFSAC) accredited the Emergency Management & Homeland Security (EMH) program, which was the first in the nation. The university lies in Federal Emergency Management Agency (FEMA) Region V, located in the Midwest region of the East North Central division.

While the University of Akron does not require experiential learning, the EMHS program requires a 225-hour internship and uses project/problem-based learning across the curriculum. The university provides faculty and students support in experiential learning through the Center for Experiential Learning EX[L], established in 2015. The Center strives to “enable students to emerge as civically engaged, skilled, and adaptable leaders, ready to take on real-world challenges” (University of Akron, n.d.). One of their essential programs is to support the development of [UN]Classes, which this course is. A [Un]Class course provides experiential learning opportunities in a class credit format that is open to all students and is interdisciplinary, problem-centered, and hands-on. These, in turn, often satisfy the “Complex Systems” general education requirement for graduation.

COURSE DESCRIPTION

The Poverty Simulation: Post-Disaster course is a senior-level current topics course in the EMHS program, open to all university students, with no prerequisite learning. The four primary learning outcomes for the course include

- LO 1: The student articulates a complex problem or issue facing society. Specifically, identifying through interprofessional team inquiries the experience of vulnerable populations or those rendered vulnerable to natural disasters.
- LO 2: The student describes multiple systemic contributors to the problem or issue. Specifically, building relationships with local agencies and organizations that would provide services post-disaster to gain insights and participation in the poverty simulation.
- LO 3: The student views the problem or issue from multiple, disparate disciplinary perspectives. Specifically, co-creating a poverty simulation for the campus community to immerse experientially into a simulated post-disaster environment and navigate support systems. Students also facilitate/ lead/ debrief participants and peers through each course phase.
- LO 4: The student evaluates the advantages and disadvantages of an approach or solution to a problem or issue. Each student builds a portfolio of their experience.

The course followed two archetypes: (a) a seminar in which learners researched and facilitated the social determinants of health in a post-disaster setting; and (b) project-based learning emerged from student-driven discovery, planning, and execution of a university-community event. The course satisfies the university’s “Complex Systems” general education requirement. The course was first taught in the fall of 2021 and used a face-to-face format with online team-based tools.

We incorporated three models or frameworks into the course. The facilitating model for content, as chosen by the students, was the Centers for Disease Control (CDC) (2021) Social Determinants of Health (SDH) model, which became the lens through which we examined outcomes of vulnerable populations post-disaster. The second model was based on the practical development of the simulation, structured using the Incident Command System (ICS). Students set up and staffed an ICS covering two operational periods: the build (design) and the simulation implementation. The structure for the students included multiple sections: operations, to

implement strategies; planning, to develop strategies along models; logistics, to manage resources; and liaison, to manage relationships on and off campus. The third model used was Kolb's (1984) Experiential Education Model (EEM) to maximize the learning activities of the course learners and the players' experience in the simulation.

Seminars

The course ran a thread of simulation development in parallel with learning the content of SDH. The EEM for the simulation content started vicariously by watching videos of disaster casualties and the students recognizing the victims' mindsets and vulnerabilities. Student teams then researched and facilitated seminars (60-90 minutes) on different elements of the SDH model to conceptualize the element's consequences post-disaster. Within the seminars, we challenged students to actively experiment with strategies to engage their respective SDH within the concurrent building of the simulation.

Simulation

The EEM for the simulation started with an introduction by another faculty member, who described the purpose and style of the original Poverty Simulation (Missouri Community Action Network, n.d.). Then, the class participated in an interprofessional Poverty Simulation at Northeast Ohio Medical University. Students reflected on this experience personally through an assignment and as a class to debrief and abstract the experience while planning the disaster elements of the simulation. The simulation immersed students into the lives and experiences of members of improvised communities.

After seven weeks of seminars, the students had the remaining three weeks to solidify the simulation. Students approached the development process experientially by using an impoverished local community and developing "family" scenarios. Within the ICS structure of the class, functional areas proposed and validated operational strategies and plans for the simulation. Students performed trial runs of the exercise before the event to experience the systems they developed firsthand for quality assurance. These tests allowed the team to reflect on their decisions and refine their professional development competencies. The trial runs were preceded by a pre-simulation survey ($n=11$), in which the students learned about simulation participants' confidence in their plans to withstand a disaster for 72 hours. Almost half (5/11) reported experiencing poverty in their lifetime.

Within the exercise, players cycled through the EEM (concrete experience of the situation, reflection on outcomes and needs, abstraction of what they learned and planning, then active experimentation in the next round of the simulation) four times before a global group debriefing. Contextually, players took on a family member role and simulated a month of life within an impoverished community. As a family, individuals needed to work or go to school, procure necessities, and maintain their health. The first week occurred before an anticipated flood, followed by four weeks of response transitioning to recovery. At the beginning of each week, players received basic information about the environment around them. Then, players moved and engaged with other team members at simulated community partners (ex., work, health clinic,

store, utilities, bank). This experience forced players to make decisions that had consequences later in the exercise. Players continually encountered social discrepancies and sequelae from the disaster, creating a dynamic environment where inequity and unanticipated events complicated their decision-making process. During week one, players could buy items and insurance policies to mitigate the effects of the flood. Socioeconomic standing limited their choices to be prepared or to respond; the ill-prepared ran more risk for illness or injury that would restrict their ability to recover. Between each “week,” players’ families had time to reflect and plan for the following week. In some instances, the exercise environment fostered inter-family collaboration that demonstrated altruism and empathy. Conversely, some families became overwhelmed by the confusion and stress of the disaster, heavily tolling their resources.

After the experience, we took time to guide personal reflection and a hotwash for the players to debrief the systematic issues at the intersection of poverty and disaster. Students designed the reflection questions to prompt a positive change in participants’ behavior relative to emergency preparedness and how the players’ professions could better participate in the recovery of those impoverished by the disaster. A post-exercise survey ($n=11$) captured sentiments around learning about the system, for example: “I’m not sure I have new tools to support those in poverty, but I know more about disaster preparedness, which I have never thought about” and “it was beneficial to understand the mindset, as well as learn about the different community partners.” More than 70 people participated in the first simulation, facilitated by ten students in the course.

Partnerships Opportunities

As a pre-internship course, the students choose community partner agencies they wanted to interact with that could benefit from students’ learning and the success of the exercise. Together with the faculty, the liaison and public information teams managed internal and external relationships with the university. For the simulation itself, over 15 academic and professional disciplines and agencies participated in the event.

Health and Safety

COVID-19, an uninvited player, challenged the course participants in several ways regarding the logistics of bringing together 75 people safely and educationally. The logistics section, which handled resources, found a space that facilitated social distancing and the placement of audio-visual equipment to help communicate effectively. The planning section created and tracked participant health responses post-event in the second operational period. No participants reported transmission of COVID.

COURSE ASSESSMENT AND OUTCOMES

We assessed the course using an electronic portfolio assignment from the student’s perspective. Throughout the course, we prompted students weekly to reflect on the course activities and identify projects or other artifacts that reflected their engagement to demonstrate course learning outcomes. Students presented their portfolios at the end of the class to describe the complex problem and their understanding of how they can contribute to solving it. Secondary to this, the

university also asked for anonymous student feedback, and the Ex[L] Center evaluated the portfolios. We also solicited interprofessional faculty and community partners' feedback.

Thematic analysis of the portfolios highlighted the ease with which vulnerable populations could be identified pre-disaster based on social disparities. The systematic barriers posed (bureaucracy and natural consequences of the disaster) created adverse snowball effects for vulnerable populations. Students shared that they previously tended to focus on immediate response in disasters and not the long-term. During reflection and feedback, student and community participants in the simulations shared their frustration about systemic injustice that increases suffering—psychologically and physically, even in a simulated disaster.

PLANNING

The school's faculty is establishing a progressive experiential approach in the curriculum to prepare students to participate fully in the internship and culminating courses in the community. The progression starts with first-year students participating in tabletop exercises devised by junior-level students and evaluated by community partners. As juniors, undergraduate field research with community partners introduces long-term community partners. Current topic courses like this meet community needs and student development.

As a Current Topic course, the content is malleable in terms of approaches to poverty and disaster because it is learner-driven. The course's next iteration will look different as COVID becomes endemic and future course participants choose different disaster contexts or vulnerable populations for inquiry. The college is asking the school to host the course again as an interprofessional offering. We expect to identify new agencies and partnerships and build relationships as the course continues.

CONCLUSION

The Poverty Simulation Post-Disaster course provides students and our academic program overlapping opportunities to use the EEM in a controlled campus environment while bringing together community partners. EMHS, as a field, benefits when students experience interprofessional activities that include multiple theoretical and practice models before field placement. Adding social disparities in health provided a new model for EMHS students to grapple with the consequences of individual decisions on the preparedness and response capabilities of individuals and family groups throughout the simulation in a disaster context.

Implementing an ICS system allowed the students to experience a process they had only studied. Students developed, designed, and shared the implementation of a hypothetical scenario to foster others' understanding of the complexities of disaster across social-economic levels and the snowball consequences of poor socioeconomic status. Operationalizing and critiquing the outcomes of the course supported the development of multiple professional competencies (Feldmann-Jensen et al., 2019). The activities engaged EMHS students with non-EMHS students, faculty from various disciplines, and community partners to create a new experience for the campus community to understand poverty in the context of disaster.

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