

EDITORIAL COMMENTARIES

**On the Margins, No More:
Teaching and Learning as a Core Concern of Disaster Scholarship
*Introduction to the IJMED Special Issues on Teaching and Learning***

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This paper introduces two special issues of the International Journal of Mass Emergencies and Disasters focused on teaching and learning. Though there is much recent literature on teaching from other fields, the hazards and disasters community has produced little written scholarship on pedagogy and on curriculum design. To address this gap, we produced a call for papers for a special issue and received many submissions. In this paper, we introduce the need for more scholarship on teaching and learning on the hazards and disaster field. This includes classroom exercises, experiential learning activities, service-learning and citizen science approaches, and explorations of curricular design. We also introduce the papers that make up the two special issues. The first issue focuses on “Innovative Teaching Techniques and Practices in Hazards and Disaster Studies” and the second on “Curricular Innovations in Hazards and Disaster Studies.” We hope that the papers contained in these two special issues will create a sustained dialogue on best practices in teaching about hazards and disasters.

Keywords: Curriculum design, hazards and disaster, teaching and learning.

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Introduction to the IJMED Special Issues on Teaching and Learning

More than a decade ago Kathleen Tierney (2007) wrote that, within the discipline of sociology, disaster research was moving “from the margins to the mainstream.” That was a hopeful development in a field where disasters had indeed mostly inhabited the margins. But as much as disaster research has moved into the mainstream of academic disciplines such as our own, the *teaching* about disaster remains mostly marginalized. As committed teachers, we both feel this is a glaring and important omission, and we both work in our own classrooms to develop innovative approaches to teaching. Still, with no sustained dialogue in the field, we felt the task was daunting.

It was a roundtable session held at the 2017 Natural Hazards Center workshop in Broomfield, Colorado—which we both attended, and which Haney co-organized—that provided the impetus for the two Special Issues on Teaching and Learning in the context of disaster. As far as we know, this roundtable was the first session on teaching and learning ever held at the annual workshop and brought together interested people from across disciplines; emergency management faculty, sociologists, political scientists, and even those working in FEMA and other governmental agencies. As valuable as these early discussions were, they also made it clear that the dialogue about teaching and learning in the disaster field lags behind many other academic disciplines, some of which even have journals devoted entirely to the topic of teaching.

The academic literature on disasters and emergencies contains scant few articles on issues germane to teaching and learning: Experiential learning, service-learning, classroom exercises, curriculum, or virtually anything else. Indeed, when Haney submitted an article on service-learning in disaster to one of the leading journals in hazards and disaster studies, he was told by the editor that issues of teaching are “somewhat marginal to our field” and the article was desk-rejected based upon that rationale. Yet, just as Tierney (2007) has argued that disasters have moved “from the margins to the mainstream” within fields like sociology, our objective in this special issue is to begin shifting teaching and learning from the margins to the mainstream among disaster researchers.

To achieve this, we put out a call for papers, hoping to get a few submissions related to teaching and learning, allowing us to publish one special issue. In the end, we received 20 submissions (but cut to 13 in the end), necessitating the splitting of one special issue into two (both the November 2018 and March 2019 issues of *IJMED*). This response and level of buy-in were unexpected, but deeply reassuring for us, as it is now clear that many disaster scholars have valuable knowledge and perspectives about teaching and about training the next generation of disaster researchers. Indeed, if we hope to train this next generation of scholars, we must not assume that it will happen in silence nor a silo. Rather,

it will happen through creating a sustained scholarly discussion about best-practices and a community in which we can share our successes and our failures (see also Peek 2006).

Given the importance of teaching and learning, we were thrilled to serve as co-editors of these two special issues on teaching and learning. This first issue (volume 36, issue 3) focuses on “Innovative Teaching Techniques and Practices in Hazards and Disaster Studies,” and the following issue (volume 37, issue 1) focuses on “Curricular Innovations in Hazards and Disaster Studies.” In short, we envision this first issue as focusing much more on pedagogical and classroom-based activities, aimed at encouraging students to take an active role in their disaster educations. The second issue, coming in March 2019, will focus on curriculum and program design innovations that, we hope, will place emergency management and disaster programs at the cutting edge.

In editing these issues, we both bring significant experience in teaching about disasters. We both work at teaching-focused, all-undergraduate universities, and we both launched Sociology of Disaster courses at our respective universities. Haney takes a full class of students to New Orleans every two years to learn about disaster recovery and to engage in both service-learning and experiential learning. Lovekamp regularly uses simulations as a way to bring important social issues to the forefront of discussions of hazards and disaster vulnerability. He also had students participate in the creation of a documentary film highlighting the 100th anniversary of a significant tornado event that impacted his local community.

In the section that follows, we discuss some emergent, and largely under-utilized, approaches to teaching about disaster, and within each sub-section, we introduce the papers for the two special issues that fit within that particular approach.

TEACHING AND LEARNING ABOUT DISASTER – WHAT DO WE KNOW?

Even though much writing and research exists about teaching and learning in the context of disaster, upon reviewing this literature, we learned that most of this body of work (including most of the work we review below) comes from medical and nursing education programs, not from the social sciences nor from emergency management programs. As such, we are especially optimistic that the papers making up this issue will advance the literature in these fields. Existing works, scant as it may be, tend to coalesce around four main areas. First, some works cover classroom pedagogy and in-class exercises, some of which are explicitly designed to teach about disaster and some of which use disasters to teach other concepts or theories. Second, we located a body of work on experiential learning in the context of disaster. Third, there is some literature on service-learning in the context of disaster, as well as citizen-science approaches to post-disaster learning, both of which are aimed at using the knowledge and skills of students to address community-identified needs. Lastly, we reviewed the literature on curriculum design. In

what follows, we provide a brief review of literature in each of these areas and discuss how this literature connects to the papers appearing in these special issues.

Classroom Practices and Pedagogies

Teaching about disasters in the classroom, we argue, is central to training the next generation of disaster researchers and emergency managers. Most teaching and learning experiences take place in the classroom, and certainly this is true of hazards and disasters. The existing literature highlights the importance of disaster education for cultivating a culture of resilience at the community level (Benadusi 2014). In many classrooms, disasters are utilized as examples to teach other academic topics, such as statistics (Reese 2004). In their first college-level disaster courses, many students find that their common assumptions about disasters are indeed wrong and not empirically supported (Alexander 2007). Still, with the current generation of students, best-practices in teaching have generally moved beyond utilizing only the lecture, and research indicates that novel and emergent methods, such as creating a game, are effective methods for teaching students about disaster (Tsai et al. 2015).

Within this tradition of classroom and pedagogical innovation, the first three papers of this issue use three different media—movies, a game, and works of fiction—to build students' understanding about disaster and to complement course theories and concepts. In a university context where we are increasingly pushed to consider more meso- or macro-level institutional dynamics, strategic plans, outcomes, and curricular design, these papers shift the focus to micro-level classroom dynamics and provide much-needed examples of innovative teaching exercises, available to be adopted and/or modified by others the hazards and disaster field.

In our first paper of the special issue, James Kendra, Laura Siebeneck, and Simon Andrew discuss the pedagogical approach of using popular disaster films in the classroom. Their paper “Disaster Movies in the Classroom: Pedagogical Value and Teaching Approaches” demonstrates how such an approach can reinforce core theories learned in the classroom.

The second paper to appear in the issue, “Riskville: A Game for Learning about Disaster Risks and Urban Planning,” by Nina Christenson and her colleagues introduces a game in which students take a hands-on approach to learning about how urban planning decisions create and reproduce disaster risks.

In the final paper introducing in-class exercises, Thomas Drabek's “Trapped: Expanding Student Understanding of the Multiorganizational Coordination through the Use of Fiction” uses fictional accounts of disaster to build an understanding of the challenges that responders face. The goal, as Drabek explains, is to enhance students' empathy with both disaster responders and victims.

Experiential Learning

Because learning often takes place in the classroom, far removed from disaster-affected communities and the arduous recoveries they are undertaking, several scholars and instructors have begun writing about introducing students to experiences and to simulations that bring disasters into sharper focus which help students move from academic *knowledge* into *knowing* (Barber and Haney 2016). As an example, Haney has partnered with his departmental colleague Caroline McDonald-Harker to take their classes of students to High River, Alberta, a town decimated by the 2013 Southern Alberta Flood. While there, the classes heard from public officials and local residents, tour the town, and learned more about the community's ongoing needs (which motivates many students to continue working and volunteering in the community once the course is over).

Experiential learning is typically understood as an approach to learning that takes students away from traditional lecture-based pedagogy while engaging them in service-learning, applied learning, cooperative education, internships, study abroad, or experimental activities (Austin and Rust 2015). It can also involve site visits and field trips, role playing exercises, and simulations. And, research demonstrates that this first-hand experience garners a better understanding of course materials (Silenas et al. 2008), though much existing research comes from medical school students rather than social science disciplines.

Across academic disciplines, one of the most popular pedagogical tools for experiential learning (particularly in the fields of risk communication and emergency management) are simulations, which are designed to provide students with the opportunity to consider and to react to real-world situations involving complex decision-making (Goto et al. 2012; Hutchinson et al. 2011). This is a particularly popular approach in communication programs which are designed to be “interactive, immersive, [and] authentic.” where students are engaged in crisis communication simulations in real-time and take on specific responsibilities and must handle competing expectations and emerging problems (Dohaney et al. 2015:1).

Within this tradition of experiential approaches, we have three papers in this first special issue which advance our pedagogical understanding.

Firstly, Katherine Browne and Trevor Even present “The ‘Culture of Disaster’ Student Immersion Project: First-Hand Research to Learn about Disaster Recovery after a Colorado Flood,” which describes an exercise whereby students engaged with local organizations working on recovery from the devastating 2013 Colorado floods and made presentations of their findings to planners, recovery personnel, and civic leaders. Their article also provides many resources that allow this exercise to be adopted by others.

Next, Jeannette Sutton and Renee Kaufman's article, “That's a Myth! Teaching about Disaster Myths through Experiential Learning,” provides a series of learning activities to

introduce students to common disaster myths, though multiple media and multiple modes of content.

Finally, Tanya Buhler Corbin's article "Teaching disaster policy and emergency management through a multi-phase, real-time disaster simulation" provides an example of a disaster simulation where students took on the roles of local officials, first responders, non-profit stakeholders, and so on, and were engaged in an increasingly complex disaster scenario.

Service Learning and Citizen-Science Approaches

Because learning in the post-disaster milieu is potentially filled with ethical dilemmas, one of the most compelling approaches for ameliorating this risk is through service-learning. Service-learning is "a form of experiential education where learning occurs through a cycle of action and reflection as students work with others through a process of applying what they are learning to community problems and, at the same time, reflecting upon their experience as they seek to achieve real objectives for the community and deeper understanding and skills for themselves" (Eyler and Giles 1999:3). Meta-analyses indicate that service-learning enhances student understanding of course materials, whereby "students participating in service-learning programs demonstrate significant gains in five outcome areas: attitudes toward self, attitudes toward school and learning, civic engagement, social skills, and academic performance," relative to students who do not engage in service-learning (Celio, Durlak, and Dymnicki 2011:175). Furthermore, the literature demonstrates that field courses are one of the most effective ways to achieve such learning outcomes, particularly for environmentally-focused content (Alagona and Simon 2010) and in international contexts (Mitussis and Sheehan 2013), both of which should translate into post-disaster settings. Unlike volunteer work, service-learning is arranged around course materials and requires students to learn the course materials while serving the community in some way. As such, it is "not about the addition of service to learning, but rather the integration of service with learning" (Howard 1998:21-22).

Service-learning is applied to many contexts, including poverty and issues affecting inner-city communities, international development, teacher education, economics, and even environmental chemistry, but it has rarely, if ever, been applied to disaster education. The only exceptions include medical students who engage in service-learning post-disaster (Steiner and Sands 2000) or community nursing (Richards, Novak, and Davis 2009). No published examples exist of disaster service-learning in the social sciences excepting Haney's (2015) study of service learning in the aftermath of Hurricane Katrina. According to his analysis of reflections by Canadian students, who spent more than three weeks in the city learning and helping local organizations to rebuild, the experience helped students understand the disaster and (slow and uneven) recovery in New Orleans, see residents' own communities in new ways, and pledge to do more to help disaster-affected communities.

Relatedly, citizen science is an approach used in various disciplines where members of a community and stakeholders engage in the data collection, organization, and dissemination process—sometimes even facilitating public participation. Although citizen science research is most common in the environmental and biological sciences, it is also often used in epidemiology as well as in the social sciences (Kullenberg and Kasperowski 2016). This group of disciplines makes the approach ideal for post-disaster settings, although the literature reveals few cases where it has been applied. One important exception is McCormick (2012), who uses a crowdsourcing approach to citizen science for studying recovery from the 2010 Deepwater Horizon oil spill (see also Haworth and Bruce 2015; Kweit and Kweit 2004). Longer-term cases of chronic contamination much more often employ citizen science approaches (Edelstein 2004; Lerner 2006; Sanchez, Adams, and Shriver 2017). Using community volunteers has several advantages over traditional research approaches, as such volunteers often have a stake in the research (their health or environment), have more available time, and are less expensive than research assistants (Cohn 2008).

Advancing this tradition of service-learning and citizen science approaches into the hazards and disaster field, we have three papers which will appear in the next special issue (March, 2019).

To start off, Michelle Meyer and her colleagues present “Interdisciplinary Citizen Science for Hazard and Disaster Education,” which describes the efforts of a class of both graduate and undergraduate students to engage with a group of local residents to understand risk in socially vulnerable communities in Houston, Texas.

As an excellent follow-up, Alissa Ruth, Amber Wutich, and Alexandra Brewis Slade bring us “A Model for Scaling Undergraduate Research Experiences: The Global Ethnohydrology Study,” which is a research-training mentorship program that engages undergraduate students in data collection and fieldwork, as well as data analysis, in perceptions of water shortages. They offer a model that is scale-able and replicable for scholars teaching in cognate areas as well.

Following that, Samantha Penta, Samantha Phillips, Amber Silver, and Emily Barrett’s article “Beyond Internships: Experiential Learning as a Tool for Emergency Management Education” describes an approach to integrating experiential and service-learning components into emergency management programs.

Laura K. Siebeneck and Brian K. Richardson’s “From Machu Picchu to Masaya Volcano: An Interdisciplinary Approach to Offering Study Abroad Courses on International Disasters and Crisis Communication” is the final paper in the service-learning and citizen science group. This paper introduces readers to a co-taught, cross-disciplinary course that examines hazards, risks, and crisis communication in Central and South America, and offers suggestions for developing similar immersive, study-abroad emergency management and disaster courses.

Curriculum Design

Within the emergency management field, much of the teaching and learning literature focus on curriculum design. As Khorram-Manesh et al. (2016) demonstrates, on-the-ground problems of coordination and organizational integration during disasters can be effectively addressed through more intentional and explicit curricular design within EM programs. Student learning experiences are aided in programs that explicitly foster connections and partnerships between academic institutions and community organizations (Richards et al. 2009). At the same time, research indicates that explicitly designing disaster education into curricula at various stages increases students' risk perceptions as well as their efforts to mitigate risk (Shiwaku and Shaw 2008). But much debate persists about the best way to design a disaster or emergency management curriculum (Ingrassia et al. 2014). When approaches such as service-learning, for instance, are explicitly structured into the curriculum, research indicates that it results in impactful learning experiences (O'Steen and Perry 2012). Three of the papers in the second special issue focus specifically on the issue of curricular design in emergency management programs.

The first of these papers is Jean Slick's article "Teaching with Cases in Disaster and Emergency Management Programs: Instructional Design Guidance." This paper presents an empirically based and theoretically rich approach to the use of cases in teaching in emergency management programs. It provides instructional design principles which can support curricular decision-making in disaster and emergency management (DEM) programs.

Second, Jörgen Sparf, Evangelia Petridou, Frida Skog, Sophie Kolmodin, and Jens Ljungdahl bring us "Experimental Design in Teaching Crisis and Emergency Management in Social Sciences: The Case of the Risk and Crisis Lab at Mid-Sweden University." Their paper provides a case study of the Risk and Crisis lab at their university, and how their lab can provide a rich environment for role-playing and simulations. This approach, they argue, is particularly germane for post-secondary institutions that have labs they wish to utilize in new ways or who are considering starting new labs.

The final paper is written by Magdalena A. Denham and Lee M. Miller. Their paper, "Partnering for Resilience: An Innovative Approach to Hazard Education and Child-Centered Risk Reduction" provides an approach to teaching graduate students in emergency management about community-level resilience-building, multi-level coordination, and emergency management principles. By taking a whole-community approach, their approach aims to benefit all stakeholders and community-members—particularly children and families.

CONCLUSION

Despite little in the disaster science literature on teaching and learning, the articles in these special issues demonstrate that pedagogical and curricular innovation are alive and well in the disaster and emergency management field. But until now, scholars and instructors have had few opportunities to write about and to share ideas on teaching and learning. If we hope to grow this field commensurate with the rate that disaster losses are growing and to encourage young people to become the next generation of disaster scholars, it is crucial that we exert more effort discussing and writing about our approaches to teaching. At the same time, when scholars in our field develop new and innovative ideas, such as the Riskville game introduced in the Christenson et al. article in this issue, it advances the discipline by allowing others to learn about, adopt, and modify those ideas to fit their own classes. Through these iterative and collaborative methods, it is our earnest hope that teaching and learning will indeed be on the margins no longer.

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We hope you enjoy the *International Journal of Mass Emergencies and Disasters* special issues on teaching and learning, and we hope that these issues are the start of a lasting discussion in our field, one we are hopeful will carry on for years to come.

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