

Using online tools to foster holistic, participatory recovery: an educational approach

Brenda Phillips describes emergency management education in a virtual environment

Abstract

The purpose of this paper is to share instructional ideas for teaching a 15 week disaster recovery graduate seminar over the Internet. This paper outlines orientation strategies, key components, student resources, and a final seminar project. A concluding section addresses concerns about distance education modes of delivery. The author offers these ideas in the hope they will inspire others to teach participatory disaster recovery.

handouts), assignments, quizzes and examinations, an asynchronous (not live) discussion board, email, and two types of synchronous (live or virtual) chat rooms where study groups can meet online. Professors can grade assignments online, conduct surveys, and offer tests. If the instructor designs close-ended surveys or tests, the computer scores and records the marks automatically. Students can view their grades, download materials, and create their own home pages. Several features help the professor manage the seminar, including systems for handling and marking assignments, tracking student participation, and linking students to external websites.

Introduction

For the past three years, *Disaster Recovery* has been taught to students in the United States (US) and, through online delivery, those living in other countries. The majority of students in past seminars reported a high level of satisfaction with seminar content, peers, instruction and their online experience. Student evaluations suggest that several factors account for their satisfaction: they can take classes from anywhere in the world at convenient hours; they enjoy interacting with other students; and they learn information they consider useful. This paper describes the general features of the online seminar, strategies for getting started on conceptual and theoretical elements of the class, ways to secure student commitment, components of the overall approach to recovery, educational resources, and the final student project.

General features of the seminar

Other than being offered via distance technology, this seminar mirrors traditional masters level work. Students read extensively in academic and practical materials, participate in synchronous (live, virtual) class sessions, and produce both individual and group projects. In past seminars, students surpassed expectations.

To deliver this seminar, the university provides a software platform called Blackboard (www.blackboard.com), one of the most commonly-used higher education distance tools in the United States. Blackboard allows the instructor to design a website where students log in to find course documents (syllabus,

Getting started

Students arrive to the seminar with varying levels of online experience. Thus, I devote the first week to activities ranging from logging into the website to joining a first live chat. During the first week, students come to an online orientation, post a self-introduction to the discussion board, and read an online assignment. In subsequent weeks there are additional readings and supplemental course materials with links to electronic journals and databases, online materials, and documents posted inside the course. Several faculty and practitioner colleagues have generously donated writings in electronic format and the library posts journal articles (in PDF) to a secure location after obtaining copyright permission.

Live class and discussion board (DB) posting assignments continue weekly through most of the 15-week seminar—a method that provides routine and simultaneously demands accountability. There are extra marks for quality and participation while the DB posts are scaled from 1–3. Students report that live classes are crucial for understanding concepts and facilitating interaction; they do not like the asynchronous DB posts as much, especially if they are new to online learning.

The general objectives of the seminar are to:

- describe perspectives useful in guiding recovery;
- identify the components of an holistic recovery;
- find funding sources for recovery;
- understand the research on recovery;
- demonstrate an ability to understand how community context influences recovery; and
- write a recovery plan.

To provide a consistent structure, weekly assignments are tied to specific learning objectives. Each assignment includes readings, general questions to help the student prepare for the live class and specific questions for the DB. Assignments are grouped into manageable segments of concepts and theories, components of an holistic recovery, resources, and recovery planning.

Conceptual and theoretical elements

While *Holistic Disaster Recovery* (HDR), is the primary text and is available free at www.colorado.edu/hazards/holistic_recovery, the seminar is supplemented with readings and guests. The three key concepts from HDR: holistic, participatory involvement and sustainability are relied on. The HDR text defines sustainability as the ability of a community to maintain itself over time. Holistic approaches consider how communities define quality of life as tied to social, economic and environmental spheres. Participatory strategies involve the public through workshops, seminars, elections and more.

Various definitions of recovery are explored, from both academic and practitioner perspectives. For example, students interview local emergency managers about recovery. Resulting DB posts reflect considerable differences in definitions and understandings among practitioners. Subsequent and intense student debates emanate from whether recovery implicitly means 'restore to the same as before' or requires sustainable hazards mitigation.

For class purposes, the term recovery is split into short-term (e.g., utilities) and long-term (e.g., rebuilding) recovery activities. Students define recovery as a social process that embraces mitigation, reduces physical and social vulnerability, and fosters comprehensive sustainability—a daunting challenge that permeates every discussion from replacing downed utility power lines to funding recovery projects.

A last key concept for the seminar is context defined as the time, place and circumstances in which a particular community experiences recovery. Throughout the seminar, students post to the DB contextual descriptions of their own communities including census data, housing overviews, matters of historical and cultural preservation, environmental issues, economic and business concerns, infrastructure and lifeline descriptions, and hazards history.

Theory provides interpretive frameworks and offers fresh ways to understand or approach seminar topics. US organisations that accredit universities expect theory as a standard part of masters level study. Emergency management theory is still emerging, largely borrowed from other disciplines. The theoretical perspectives that work well within the present framework include systems theory, political economy, and vulnerability approaches.

Systems theory includes the earth's physical systems, human systems, and the constructed system (Mileti 1999:107). As used in this seminar, systems theory sensitises students to reasons why society faces disasters: an 'increase in the size and complexity of the various systems' coupled with poor fit between systems. Students learn they can influence some systems by incorporating structural and non-structural mitigation projects, addressing human vulnerability, and living in closer harmony with the physical environment.

Political economy or conflict perspectives analyse recovery problems as brought about by government and economic interests (Tierney et al 2001). Thus, damages result not from the physical impact of a disaster but rather from 'the politics of land development...the short-term profit orientation of real estate entrepreneurs' and a lack of local government code enforcement and/or land-use planning (ibid:20).

The ecological vulnerability perspective targets the inequitable distribution of resources. This perspective identifies those most likely to need long-term recovery aid as those that experience 'differential access to political power' due to social and economic discrimination (ibid:21). A vulnerability approach 'can also be used to reveal the capabilities of particular social groups in the face of hazards' (Enarson et al 2003:14).

Student buy-in to the concepts and theories

These concepts and theories are new to students. As they are abstract, time is scheduled to review terms and definitions and to provide and solicit examples. Without doubt, the students' favourite learning experience comes from debate and role-playing. The most effective (and most fun) class comes from a city council scenario where students take on roles from governmental, private citizen and business sectors. Careful casting, and knowing students' personalities, makes for a lively scenario. Working online, students enter the virtual classroom in their role and walk through a typical council agenda. A large-scale developer submits their request, followed by irate citizens. Council members call on the local emergency manager and discover the proposed development includes a floodplain. Such information compels students to research public involvement strategies which are provided in early chapters of *HDR*.

The Blackboard platform allows the instructor to send private messages in order to guide the process, eject a participant, or send groups off to confer in private. Students often decide to take on additional roles or solicit expert advice at this point including: public housing director, local environmentalists, parks director, community activist, chamber of commerce director, storm-water and drainage city employee, federal floodplain official, environmental protection agency employee, sociologist, etc.

The exercise brings attention to the full cadre of interests involved in risk reduction at the community level and how to present an issue in a politicised context when

social, environmental and economic interests are at stake. The educational experience develops more fully if the professor assigns students to perspectives or roles they had not previously considered and need to research in order to present effectively.

Central components of the course

Once the foundation is laid, the seminar moves on to the basic parts of an holistic recovery (going beyond those in HDR). One to two weeks is spent on each component (below) and topics are supplemented with both academic and practical readings, case studies and guest speakers.

TOPIC	READING AND ASSIGNMENT (see References for full citation)
Economic	HDR, Chapter 5 Webb et al, <i>Business Recovery</i> article FEMA's Business Recovery checklists at http://www.fema.gov/ofm/bc.shtm Online guest: Dr Gary Webb
Social	HDR, Chapter 6 Online guests: Dr Brenda Phillips, Dr Elaine Enarson
Environmental	HDR, Chapter 7 www.epa.gov/greenkit/sitedex.htm Browse www.fema.gov/regions/v/env/env_off.shtm Come to class prepared to share what's happening in your FEMA region with environmental programmes: www.fema.gov/ep/contacts.shtm www.fema.gov/ehp/nepa.shtm Read through the National Environmental Policy Act, its relationship to FEMA Read through these brief success stories: www.fema.gov/ehp/ss.shtm Online guest: Rod Emmer, author of Chapter 7
Historic Preservation	www.fema.gov/ehp/hplinks.shtm www.heritagepreservation.org/PROGRAMS/TFC.HTM www.fema.gov/ehp/milton.shtm
Housing	Comerio, <i>Disaster Hits Home</i> Phillips, <i>Cultural Diversity</i> Enarson, <i>Women and Housing</i> Online guest: Mary Comerio
Infrastructure	Chapters 5 and 6 in <i>Practical Lessons from the Loma Prieta Earthquake</i>
Debris Removal	IS 632 Introduction to Debris Operations in FEMA's Public Assistance Program, free at http://training.fema.gov/EMIWeb/IS/ Online guest: US Army Corps of Engineers
Donations Management	Neal articles listed in Bibliography Online guest: Dr David Neal

Resources

Students may feel overwhelmed by the magnitude of long-term recovery efforts. To address their concerns a third seminar section examines case studies as well as financial and organisational resources. In the US, the Federal Emergency Management Agency (FEMA) offers a practical workbook with case studies titled *Planning for Post-Disaster Recovery and Reconstruction* (Schwab et al, 1998). This FEMA book includes sample policies, a planner's toolkit, guides to disaster operations, descriptions of the planning process, detailed case studies, and more. Guest speakers (including chapter authors and book editors) and scholarly journal articles enhance the learning experience.

To fund recovery, students work in groups to develop a resource list of grants, funding programmes, and organisational resources. Most students expect to work in the US context and they take independent study courses freely available from FEMA (<http://training.fema.gov/EMIWeb/IS/>). The first is IS-630 *Introduction to the Public Assistance Process*. Students also participate in an extra credit game based on IS-288, *The Role of Voluntary Agencies in Emergency Management* and the *Long Range Recovery Committee Manual* published by the National Voluntary Organizations Active in Disaster, available free at www.nvoad.org/articles.htm



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Final class project

To pull all the parts together into a coherent whole, students complete a final project by working in groups and producing a recovery plan.

Example:

Assume that you have been asked to design a sustainable, but practical recovery effort for a community of your choice. You can envision yourself as a consultant, an emergency manager, a city/state/ federal official, a department head, a committee chair, the head of the Chamber of Commerce, or a community leader. The plan may be either a pre or post-disaster recovery plan. Your job is to create an initial document that could be presented to the local recovery committee, emergency management agency, and/or elected officials. In this document, you should lay out your vision and recommendations for a realistic, sustainable recovery. I expect that you will:

- select the disaster/mass emergency most likely to impact your community;
- engage yourself in considering both the readings and community context;
- justify what you recommend;
- describe the community in some detail, especially vis-à-vis the five bullets below;
- include consideration of the community in relation to the economy, environment, demographics, and physical infrastructure;
- address vulnerable populations and geographic locations; and
- recommend an organisational framework for implementing the plan.

You should frame your recovery in ways that address these areas (as a minimum):

- Economic vitality.
- Environmental resources.
- Social and intergenerational equity issues.
- Housing.
- Physical infrastructure and lifelines.

As part of your effort, remember to consider issues surrounding debris, volunteer and donations management. In addition, you may want to tie the recovery plan to any existing comprehensive planning effort in your community.

To assist and guide students, detailed outlines from two local recovery plans that occurred in post-disaster contexts are supplied.

Conclusion

Despite the success described, several caveats may be in order. Studies report that online courses are more time consuming for the faculty member than traditional formats, a finding that fits with this experience. The emergency management student market includes both novice and those with experience so the instructor needs to find ways to build confidence and challenge exclusionary cliques. Additional time is spent orienting students to virtual environments and to building a sense of community among participants (Rovai 2002). Group projects, though trying at times, are one method recommended to build community (ibid), an activity that can pair newcomers with emergency management veterans. The instructor may take on non-hierarchical roles such as 'encourager, harmoniser, compromiser, gatekeeper, standard setter, observer, or follower' (ibid)

in order to connect distance learners to the instructor and peers.

Research on Internet classes indicates that numbers beyond 25 are labour-intensive for the faculty member, undermine effective pedagogy, and negatively affect the student (Pachnowski & Jurczyk 2003). Traditional classes can accommodate larger sizes more easily, while larger online classes result in an exponential increase in faculty work load rather than an 'averaging.' Online students also expect more frequent communication, which consumes faculty time (Hardy & Robinson 2002; Hannon et al 2002). Studies recommend eight to 10 students if the instructor utilises synchronous components, but certainly no more than 20 for basic levels of quality interaction (Rovai 2002; Oren et al 2002; Neal 2004).

Yet, it is pedagogy that counts most. To quote Frydenberg (2002), 'unless the instructional design... emphasises the students as a group of learners, individual students are most likely to perceive themselves as interacting within a mutually exclusive student/tutorial relationship with the instructor.' A classroom that is 'less linear and more interactive and dynamic' is thus recommended (Olson & Wisner 2002). Unfortunately, less than 25% of faculty use synchronous (live chats) forms of interaction (Restauro 2003). It is the faculty-student interaction that makes this seminar successful, particularly activities that built relationships among students (group projects) and connect all learners to each other through synchronous means.

References

- Comerio, M., (1998), *Disaster Hits Home*, University of California Press, Berkeley
- Enarson, E., (2001), *A Social Vulnerability Approach to Disasters*, a set of course materials available free at <http://training.fema.gov/emiweb/edu/completeCourses.asp>
- Enarson, E., (1999), Women and housing issues in two US disasters: case studies from Hurricane Andrew and the Red River Valley Flood, *International Journal of Mass Emergencies and Disasters*, Vol. 12, No. 1, pp 39–63
- Frydenberg, J., (2002), Quality standards in eLearning: a matrix of analysis, *International Review of Research in Open and Distance Learning*, www.irrodl.org/
- Geotechnical Board, National Research Council, (1994), *Practical Lessons from the Loma Prieta Earthquake*, <http://books.nap.edu/catalog/2269.html>
- Hardy, D. W., Robinson, R. I., (2002), The University of Texas System Telecampus: a statewide model for collaboration, *International Review of Research in Open and Distance Learning*, www.irrodl.org/
- Hannon, P. A., Umble, K. E., Alexander, L., Francisco, D., Steckler, A., Tudor G., and Upshaw, V. (2002), Gagne and Laurillard's Models of Instruction Applied to Distance Education: a theoretically driven evaluation of an online curriculum in public health, *International Review of Research in Open and Distance Learning*, www.irrodl.org/
- Mileti, D., (1999), *Disasters by Design*, Joseph Henry Press, Washington D C <http://books.nap.edu/catalog/5782.html>
- Natural Hazards Research and Applications Information Center, University of Colorado, (2002), *Holistic Disaster Recovery*, www.colorado.edu/hazards/holistic_recovery
- Neal, D., (1993), *Flooded with relief: issues of effective donations distribution*, proceedings of the Seventeenth Annual Conference of the Association of State Floodplain Managers, pp 179–182
- Neal, D., (1994), The consequences of excessive unrequested donations: the case of Hurricane Andrew, *Disaster Management*, Vol. 6, No. 1, pp 23–28
- Neal, D., (2004), Teaching introduction to emergency management: comparing in class and distance learning approaches, *International Journal of Mass Emergencies and Disasters*, Vol. 22, No. 1, pp 103–116
- Olson, T., & Wisner, R., (2002), The Effectiveness of Web-Based Instruction: an initial inquiry, *International Journal of Research in Open and Distance Learning*, www.irrodl.org/
- Oren, A., Mioduser, D., Nachmias, R., (2002), The Development of Social Climate in Virtual Learning Discussion Groups, *International Review of Research in Open and Distance Learning*, www.irrodl.org/
- Pachowski, Lynn M. and Joseph P. Jurczyk, (2003), *Perceptions of Faculty on the Effect of Distance Learning Technology on Faculty Preparation Time*, <http://www.westga.edu/~distance/ojdla/fall63/pachnowski64.html>
- Phillips, B., (1993), Cultural diversity in disasters: sheltering, housing and long-term recovery, *International Journal of Mass Emergencies and Disasters*, Vol. 11, No. 1, pp 99–110
- Restauro, S., (2003), *Personal communication documented through online evaluations and review of literature*, Office of Distance Education, Jacksonville State University
- Rovai, A., (2002), Building Sense of Community at a Distance, *International Review of Research in Open and Distance Learning*, www.irrodl.org/
- Jim Schwab, J., Deyle, R., Eadie, C., Smith, R., and Topping, K., (1998), *Planning for Post-Disaster Recovery and Reconstruction*, see www.fema.gov/fima/planresource.shtm, Copies available from FEMA Publication Warehouse (1-800-480-2520), request by title, No FEMA number
- Tierney, K., Lindell, M., Perry, R., (2001), *Facing the Unexpected*, Joseph Henry Press, Washington D C www.nap.edu/catalog/9834.html
- Webb, G., Tierney, K., and Dahlhamer, J., (2000), Businesses and Disasters: Empirical Patterns and Unanswered Questions, *Natural Hazards Review*, Vol. 1, pp 83–90

Author

Professor Brenda Phillips, is a subject-matter expert at Oklahoma State University in underserved populations in disaster situations. She teaches both undergraduate and graduate emergency management and is among the first faculty in the world to teach emergency management online. Her courses have included Populations at Risk, Disaster Recovery, Foundations of Emergency Management, Research Methods in Emergency Management, Participatory Action Research, Emergency Management Leadership. Her work has been funded by the National Science Foundation, US Geological Survey and Natural Hazards Centre and has been published in numerous journals and technical publications. Dr Phillips has been invited to present her work to the Australian Emergency Management Institute, the FEMA Higher Education Annual Conference, the US National Academies of Science, the Annual Hazards Workshop in Colorado, the Flood Hazard Centre (United Kingdom) and at several national offices in the People's Republic of China. She holds a doctorate in Sociology from Ohio State University. Contact: Brend.Phillips@okstate.edu