The Profession of Emergency Management:
Educational Opportunities and Gaps [*]

by

JoAnne DeRouen Darlington
Department of Sociology and Anthropology
Western Illinois University
Macomb, IL 61455

		Form Approved
Report Documentation Page		OMB No. 0704-0188

Public reporting burden for the collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to a penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.

1. REPORT DATE **2008**	2. REPORT TYPE	3. DATES COVERED **00-00-2008 to 00-00-2008**

4. TITLE AND SUBTITLE	5a. CONTRACT NUMBER
The Profession of Emergency Management: Educational Opportunities and Gaps	5b. GRANT NUMBER
	5c. PROGRAM ELEMENT NUMBER
6. AUTHOR(S)	5d. PROJECT NUMBER
	5e. TASK NUMBER
	5f. WORK UNIT NUMBER
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) **Department of Sociology and Anthropology,Western Illinois University,Macomb,IL,61455**	8. PERFORMING ORGANIZATION REPORT NUMBER
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)	10. SPONSOR/MONITOR'S ACRONYM(S)
	11. SPONSOR/MONITOR'S REPORT NUMBER(S)

12. DISTRIBUTION/AVAILABILITY STATEMENT
Approved for public release; distribution unlimited

13. SUPPLEMENTARY NOTES

14. ABSTRACT

15. SUBJECT TERMS

16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT	18. NUMBER OF PAGES	19a. NAME OF RESPONSIBLE PERSON
a. REPORT **unclassified**	b. ABSTRACT **unclassified**	c. THIS PAGE **unclassified**	**Same as Report (SAR)**	**32**	

Standard Form 298 (Rev. 8-98)
Prescribed by ANSI Std Z39-18

The Profession of Emergency Management:
Educational Opportunities and Gaps

Introduction

For the past several years, as the profession of emergency management has been evolving, there has been a growing interest in the need for more formalized training for the nation's hazards and emergency managers. The most significant component of this profession's evolution has been the increase in the number of academia degree programs for emergency management, both undergraduate and graduate (see, for example, Appendix A) and the increase in the number of professionals seeking emergency management as a first career choice. The profession has witnessed the inclusion of specialized training initiatives emphasizing leadership and management competencies; increased interest in program accreditation, certification, professional standards, and performance measurement. Also evident is the increased diversity within the profession, with more disciplines or specialized groups participating; and increased participation by the business sector, and other non-governmental organizations.

While all this interest in, and diversity among, various efforts relating to the emergency management profession is promising, the activity is not coordinated. Rather it is comprised of individual efforts of sole organizations or institutions. There is a need to clarify exactly what is needed in this whole field. The distinction between "skills" or "performance" based training (such as that offered by the Emergency Management Institute (EMI) now) and theory-based training offered by institutions awarding degrees must be defined. This research is a first step in determining the character of the nations existing higher educational opportunities in hazards and emergency management. This report summarizes the existing educational opportunities and identifies the gaps in the current opportunities in hazards and emergency management education.

Study Design and Execution

To address the problems outlined above, this research project takes stock of, and documents all the emergency and hazards management training, education and certification efforts currently underway. The project includes a thorough search to identify all academic institutions and government organizations offering courses to increase the knowledge, ability and skills of all professionals in Hazards and Emergency Management (see Appendix A). The population for this study consisted of all institutions of higher learning in the United States. A list of community colleges, colleges and universities in the United States generated by the Internet search engine, "Infoseek", detected a population of 3920 schools with contact information for each. If the school had an Internet web site or an E-mail contact listed, they were included in the sampling frame. A sample of 1886 schools were contacted via web site and/or E-mail for information concerning emergency management education. The response rate was approximately 50 percent, with 945 schools being included in the final analysis. There were 113 institutions of higher learning that offered courses in emergency management (11.6 percent of the total respondents). An additional 46 state departments of emergency management were identified that offered training and instruction in emergency management. Emergency management web sites were not located for the following states: Hawaii, Montana, New Jersey and West Virginia.

From each institution, information was sought on the location of the program, the mission of the program, courses offered, the objective of each course, the course description or syllabi, the target audience, and whether or not the course is a part of a larger program of study or certification program. The EMI listing of reference materials for courses was used to identify study areas of emergency management, hazards and disasters. From course descriptions and syllabi, information was obtained on whether or not the following reference literature and materials were used in the programs/courses offered:

General emergency management: Periodicals, research centers, associations, Internet/web sites specializing in emergency management, hazards and disasters.

Profession of emergency management: Materials addressing the role and responsibilities of the professional emergency manager. This includes the aim and scope of emergency management and the evolution of programs and policies regarding hazards and disasters.

State and local emergency management: Materials addressing integrated city planning and emergency preparedness, emergency management principles and practices for local government, partnerships for community preparedness, problems and issues of local emergency management, and disaster operation plans.

Emergency management skills: Materials addressing the development of emergency management skills such as leadership, communication, decision making, power and influence, maintaining organizational integrity, creative financing, volunteer resources, as well as other administrative responsibilities.

Disaster planning and preparedness: Materials addressing principles of preparation and coordination, preparedness policy making, integration of city planning and emergency preparedness, readiness, and evacuation.

Disaster warning systems and citizen response to warnings: Materials addressing disaster warning and communication processes, the diffusion of warnings, vulnerable populations, and citizen response to warnings, such as decisions to stay or evacuate.

Citizen and community disaster preparedness: Materials addressing community disaster education, conducting disaster education activities and presentations, getting the community involved in preparing for disaster.

Disaster response and operations: Materials addressing disaster response, evacuation, search and rescue, mass casualties, mental health professional guidelines, resource management, money/donations, volunteers.

Hazard prevention and mitigation: Materials addressing the adoption and implementation of planning measures and hazard mitigation policies. Engineered structures, role of engineering and technology in hazard reduction, seismic design guidelines. Non-structural mitigation, growth management, floodplain management, public choice.

Disaster relief and recovery: Materials addressing disaster relief and rehabilitation programs, recovery after a disaster, family recovery, race, religion, ethnicity and recovery, ethics of relief giving, loan request outcomes, coordination of emergency relief, unmet needs of disaster victims, long-term recovery.

Information technology and emergency management: Materials addressing information technology for crisis management, microcomputer based emergency response systems, real time decision support, the Internet and disaster response, computer simulation systems to assess impacts of hazards, operational area satellite information systems, remote sensing imagery, geographic information systems.

Biological, toxic agents and epidemic hazards: Materials addressing biological hazards, chemical stockpile disposal, epidemiological surveillance after natural disaster, infectious disease, chemical and biological weapons and war.

Business and industry crisis and accident management: Materials addressing business and corporate planning, preparedness and recovery activities, ethics in practice, social and moral responsibility in management, business vulnerability.

Earthquake, tsunami and geologic hazards: Materials addressing awareness of the earthquake hazard, seismic safety policies, seismic design guidelines, tsunami hazard reduction guidelines, earthquake hazard mitigation, geologic hazards.

Floods, flash floods and dam failure: Materials addressing living on a floodplain, flood hazard management, floodplain maps, flood effects/impacts, national flood insurance program.

Forest fire, wildfire and conflagration: Materials addressing wildfire siege, bush fires, wildland/urban interface, fire storms.

Hazardous materials: Materials addressing handling hazardous materials, public perceptions and community awareness of pollution, hazardous materials legislation, hazardous chemicals and the right to know.

Hurricanes, cyclones, typhoons and coastal erosion: Materials addressing response to hurricane warnings, perception of the hurricane hazard, hurricane evacuation behavior, hurricane preparedness, recovery from hurricane damage.

4

Landslide, mudslide, and rockslide: Materials addressing landslide inventory of occurrence, loss of lives and costs associated with slides, reducing landslide hazards, landslide hazard and risk mapping, debris flows and long term mitigation of slide hazards.

National Security and terrorism hazards: Materials addressing terrorism, its roots, impacts, and responses, planning for terrorism and the increasing threat of terrorism, consequences of terrorism, and coping with the media.

Nuclear power plant hazards: Materials addressing planning and preparedness for nuclear power plant accidents, need for evacuation, Three Mile Island, Chernobyl, earthquakes and nuclear power, guidelines for alert and notification systems.

Thunderstorm, lightning, and tornado: Materials addressing tornado watches, thunderstorms, tornado threats, community response to tornado disaster, and the national summary of tornados.

Transportation accidents: Materials addressing train derailments and airliner disasters.

Volcano: Materials addressing volcanoes of the world, potential hazards from future eruptions, citizen perceptions of volcano threat, post-eruption flood hazards, citizen response to volcanic eruptions, warnings and responses to Mount St. Helens eruption.

Public administration and emergency management: Materials addressing public policy, publication administration, FEMA's changing role in disaster management, flood control policy failures, attitudes toward zone controls, risk and legislative response, policy alternatives, effectiveness of assistance programs, disasters and development, government liability, disaster insurance protection, insurance versus disaster relief, and the regulation of flood hazard areas.

Sociology of disasters: Materials addressing the social organization of hazards and disasters, including risk exposure, risk perception, acceptable risk, risk communication, preparedness, warning, risk reduction, response, recovery and reconstruction. Collective behavior and social organization with attention to norms, blame, scapegoats and villains in disasters. Social problems in disaster, family evacuation, organized behavior in disaster as well as the behavior of organization in disaster.

Political aspects of disasters: Materials addressing natural disasters and hazards as political variables. The politics of building safety, recovering from disaster, federal relief policy and politics.

Economic aspects of disasters: Materials addressing the analysis of costs and benefits of disaster responses, economic consequences of disasters, local economies, residential values and sales, and the financial implications of disasters.

Research methods and analysis: Materials addressing the methodological challenge in disaster research, methodological techniques of data collection and analysis, communicating knowledge from researchers to local users, ethical problems in field work, and program evaluation.

Fire community and emergency management: Materials addressing command and control of fire department operations at catastrophic disasters, changes in response patterns of fire departments in civil disturbances, and fire officer's guide to disaster control.

Public health and emergency management: Materials addressing infectious disease following disasters, mental health admission rates, delivery of mental health services, disaster body handling, and epidemiologic analysis of warfare.

Ethics and emergency management: Materials addressing management ethics, moral responsibilities of professionals, ethical dilemmas in hazard management, ethical land use, ethics in decision making, government ethics, lessons from tragedy (such as Bhopal), and ethics involved in decision analysis and public risk.

Media, disasters and emergency management: Materials addressing disasters and the mass media, news media responsibilities for disaster myths, perception of the social responsibility of media roles in emergency planning, preparation, response and recovery.

Legal issues in emergency management: Materials addressing legal issues in natural disaster response, redefinition of property norms, law and its effect on interorganizational authority structures in disaster responses.

Psychological Dimensions of disaster: Materials addressing the areas of perception, beliefs, cognition, and attitudes, stress response, adaptation, uncertainty, demoralization and traumatic neurosis.

Data were collected over the spring and summer of 1999 using existing documents available on the World Wide Web and by short questionnaires sent to institutional representatives through electronic mail. Data were analyzed using the Statistical Package for the Social Sciences (SPSS). Descriptive findings are presented, followed by a discussion of the gaps in opportunities.

Colleges and Universities with Emergency Management Education

Table 1. (see Appendix C) presents information on the percentage of U.S. colleges and universities with Emergency Management education opportunities. Only 4.66% of the 945 schools contacted for information had an Emergency Management program. Just over seven percent of the schools had Emergency Management courses, but did not have an Emergency Management degree program or certificate program. Just 11.96% of all the schools had emergency management educational opportunities. Merely 1.48% of the schools had an Emergency Management certificate, concentration or minor. Less than one percent had a Bachelor's degree in Emergency Management. Scarcely 1.59%

6

of the schools had Emergency Management related post-graduate degrees.   Only 4.44% offered one or more courses in Emergency Management, hazards and/or disasters. A little more than two percent of the schools had proposals in progress for Emergency Management programs, and less than one percent of schools had a Bachelor's degree related to Emergency Management. One hundred and seventy-eight schools (18.83%) had courses on Fire Technology and/or Fire Safety. Just over sixteen percent of schools offered courses on Hazardous Material disposal, emergencies, and/or clean-up. The courses on fire technology and/or safety and the area of Hazardous Materials were excluded from further analysis.

Degrees and courses offered by Institutions with Emergency Management Education

Table 2. (see Appendix C) provides more information on the sample by giving a breakdown of the number of programs specifically dealing with emergency management, the number of emergency management programs being proposed and the number of emergency management-related bachelor's degrees. Thirty-nine percent of the colleges and universities in the sample have emergency management programs. Sixty-one percent of the colleges and universities in the sample offer emergency management courses, but do not offer degree programs in emergency management.

There are 44 colleges and universities offering degree programs in emergency management. Twelve percent of the colleges and universities in the study offer an emergency management certificate, concentration, or minor. Eight percent of the colleges and universities in the study offer an associates degree in emergency management. Five percent offer a bachelor's degree in emergency management. Thirteen percent of the schools offer a post-graduate degree with a specialization in emergency management, hazards and/or disasters.

There are 69 schools that offer one or more courses in emergency management, hazards and/or disasters, but do not offer any type of certification or degree program. Thirty-seven percent of the colleges and universities in the study offer one or more courses in emergency management, hazards and/or disasters. Nineteen percent of the colleges and universities in the study have proposed an emergency management program, but do not have a program at this time. Four percent of the colleges and universities in the study offer bachelor's degrees in fields related to emergency management. Table 3. (see Appendix C) indicates that there are a total of 113 colleges and universities (44 with programs and 69 without programs) and 44 state offices of emergency services (OESs) included in this study (see Appendix B).

Emergency Management Bibliography used in Courses

Table 4. (see Appendix C) presents the percentage of schools having a course (or courses) that use educational materials (such as research publications) to address each of the study areas specified. One course could have used materials from more than one of the study areas. The traditional six areas of study in emergency management (planning, pre-event mitigation, response, recovery, reconstruction, and post-event mitigation) are well represented in the courses offered by schools and agencies. For example, seventy-two percent of schools and agencies offered courses that addressed issues of emergency management skills development. Sixty-seven percent of schools and agencies offer courses in state and local emergency management. Sixty-five percent of schools offered courses that addressed

general emergency management information, such as journals, periodicals, research centers, professional associations, and web sites specializing in emergency management, hazards and disasters. Fifty-eight percent of schools offered courses that addressed the role and responsibilities of the professional emergency manager. This includes the aim and scope of emergency management and the evolution of programs and policies regarding hazards and disasters. Fifty-three percent of the schools offered courses that addressed hazard prevention and mitigation, and disaster relief and recovery. Forty-seven percent of the schools offered courses that addressed disaster planning and preparedness, disaster response and operations, and citizen and community disaster preparedness.

Adequately represented, though not nearly as readily available, are courses on warning systems and response and information technology as well as those courses that address specific hazards. For example, forty-two percent offered courses that addressed disaster warning systems and citizen response. Thirty-seven percent offered courses that addressed floods, flash floods, and dam failures and another thirty-seven percent offer courses addressing the handling of hazardous materials, public perceptions and community awareness of pollution, hazardous materials legislation, hazardous chemicals and the right to know. Thirty-six percent offered courses that address information technology and emergency management. Thirty percent offered courses that address forest fire, wildfire and conflagration. Twenty-nine percent offered courses that address biological, toxic agent and epidemic hazards. Twenty-four percent offered courses that address hurricanes, typhoons, cyclones, and coastal erosion. Twenty-one percent of the schools and agencies offered courses that address earthquakes, tsunami and geologic hazards, thunderstorms, lightning and tornados. Sixteen percent of the schools offered courses that address landslides, mudslides and rockslide hazards. Only five percent of the schools offered courses that address volcanos, winter storms, snow storms, blizzards and avalanches.

There are even fewer courses offered by schools and agencies that address the areas of study mainly dedicated to the social and psychological sciences. Twenty-five percent of the schools offered courses that address business and corporate planning, preparedness and recovery activities, ethics in practice, social and moral responsibility in management and business vulnerability. Twenty-one percent offered courses that address psychological dimensions of hazards and disasters. Fifteen percent offered courses that address the sociology of disasters. Thirteen percent offered courses that address community and emergency management and the media, disasters and emergency management. Thirteen percent of schools offered courses that address public administration and emergency management. Seven percent of the schools offered courses that address the political aspects of emergency management, hazards and disasters. Seven percent of the schools offered courses that address public health and emergency management. Seven percent of the schools offered courses that address the legal aspect of emergency management, hazards and disasters. Five percent of the schools offered courses that address the economic aspects of emergency management, hazards and disasters. Five percent of the schools offered courses that address the ethical aspects of emergency management, hazards and disasters. Finally, there are a handful of areas with very few courses offered by schools and agencies. These include only five percent of schools that offer courses addressing national security and terrorism, nuclear power plants, and transportation accidents. There were no courses that address the methodological challenge in disaster research, such as communicating knowledge from researchers to local users, ethical problems in field work, and program evaluation.

Demographic Information on Emergency Management courses

Thirty-eight percent of the schools and agencies offered one to five courses in emergency management, hazards or disasters (see Table 5 in Appendix C). Fifty-one percent of the schools and agencies offer six to ten courses. Eleven percent of the schools and agencies offered more than ten courses in emergency management, hazards and disasters.

Table 6. (see Appendix C) provides information on only 79 schools and agencies (78 organizational representatives have not responded to E-mail requests for information). Sixty percent of the schools and agencies that did respond to the request for information stated that the enrollment for courses is between eleven and twenty students. Seventeen percent of the schools and agencies states that the enrollment for courses is between twenty-one and thirty students. Two percent of the schools and agencies stated that the enrollment for courses is between 31 and 40 students. One agency reported that the enrollment for courses is often more than forty students.

Table 7. (see Appendix C) provides information on the number of program graduates per year for 33 schools (11 organizational representatives did not respond to the E-mail request for information). Fifty-two percent of the schools with an emergency management degree program graduate between one and ten students per year. Twenty-one percent of the schools with an emergency management degree program graduate between eleven and twenty students per year. Twenty-one percent of the schools with an emergency management degree program graduate between twenty-one and thirty students per year. Six percent of the schools with an emergency management degree program graduate between thirty-one and forty students per year. Table 8. (see Appendix C) reveals that only seventeen percent of the schools offer emergency management courses through a distance learning program.

Types of Emergency Management programs and their course offerings

Table 9. (see Appendix C) provides information on the emergency management bibliographic areas used in courses for schools with Emergency Management programs, schools with courses but without programs in Emergency Management, and for State Offices of Emergency Services (OESs). A pattern emerges from this display of data. State OESs are most likely to offer courses in the seven traditional areas of emergency management education (planning, pre-event mitigation, response, recovery, reconstruction, and post-event mitigation). For example, ninety-one percent of OESs offer courses in citizen and community preparedness, eighty-nine percent of OESs offer courses in disaster planning and preparedness, eighty-four percent of OESs offer courses in warning systems and citizen response, seventy-seven percent of OESs offer courses in hazards prevention and mitigation, and sixty-eight percent of OESs offer courses in disaster relief and recovery.

Schools with emergency management programs are most likely to offer courses in the profession of emergency management (95%), state and local emergency management (91%) and emergency management skills development (86%). Also, schools with emergency management programs are more likely to offer courses in the seven traditional areas of emergency management than are schools without programs in emergency management. For example, eighty percent of schools with

programs in emergency management offer courses in hazards prevention and mitigation, compared to only twenty percent of schools without programs in emergency management. Seventy-seven percent of schools with programs in emergency management offer courses in disaster relief and recovery, compared to only twenty-eight percent of schools without programs in emergency management. Sixty-six percent of schools with programs in emergency management offer courses in disaster response and operations, compared to only thirteen percent of schools without programs in emergency management. Fifty-two percent of schools with programs in emergency management offer courses in disaster planning and preparedness, compared to only seventeen percent of schools without programs in emergency management. Schools without programs in emergency management do not address the traditional areas of emergency management as often as either the OESs or the schools with programs in emergency management.

Schools with programs in emergency management are more likely to offer courses that address the areas of study attributed to the social sciences, than are the OESs or schools without programs in emergency management. For example, forty-one percent of schools with programs in emergency management offered courses addressing the psychological dimensions of disaster as compared to twenty-five percent of OESs and only six percent of schools without programs in emergency management. Thirty-four percent of schools with programs in emergency management offered courses addressing the sociological aspects of disasters as compared to ten percent of schools without programs in emergency management and only five percent of OESs. Eighteen percent of schools with programs in emergency management offered courses addressing the political aspects of disasters as compared to only three percent of schools without programs in emergency management and only two percent of OESs. Twenty percent of schools with programs in emergency management offered courses addressing public health and emergency management as compared to one percent of schools without programs in emergency management and two percent of OESs. Twenty percent of schools with programs in emergency management offered courses addressing legal issues in emergency management as compared to one percent of schools without programs in emergency management and two percent of OESs. Sixteen percent of schools with programs in emergency management offered courses addressing the ethics and emergency management as compared to two percent of OESs and none of schools without programs in emergency management.

Regions with Emergency Management courses available

Table 10. (see Appendix C) presents information on the percentage of colleges and universities and the percentage of OESs that offer courses in each FEMA region. Region IV has the most schools and OESs offering courses with nineteen percent of the schools that offer courses being located in that region, and eighteen percent of the OESs offering courses being located in Region IV. Region III, Region V and Region IX also have ample courses offered through schools and OESs in these regions. Region X has the fewest courses offered through schools and OESs located in the region with only four percent of schools offering courses being in the region and seven percent of OESs offering courses being in the region.

Discussion

What constitutes comprehensive education in emergency management? The findings points to six traditional areas: 1) planning, 2) response, 3) recovery, 4) reconstruction, 5) pre-event mitigation, and 6) post-event mitigation. Most emergency managers participating in educational opportunities through EMI are receiving skills training, but their classroom instruction provides very little theoretical development or critical thinking skills. Educational opportunities within the university setting provides theory with very little training. Why is this the case? How do we link theoretical development with skills training?

What does the nation want in the future? What the nation currently has in not a vision of needs, but rather a reactionary mix of courses that have been assembled to respond to specific laws aimed at specific hazards and specific responses. Curriculum are not holistic, but an accumulation of topics related to hazards and disasters. We need to harness this misdirected energy in a new direction. Leadership is needed with a vision of how to link theory and performance based training within a core curriculum of emergency management education.

Emergency managers are now faced with problems they have seldom before confronted. They are expected to understand complex physical and social systems, conduct sophisticated outcomes analyses, and offer long-term solutions to recurring problems. To address these complexities, education in emergency management should include interdisciplinary and holistic degree programs. Programs should employ curriculum that attempt to solve the real-world problems entailed in linking hazards and sustainability. This will require new interdisciplinary degree programs that focus on sustainable hazards mitigation (Mileti 1999:13-14).

We need to address the crucial question of how thinking and learning can be enhanced so that new ways of learning will promote new ways of understanding-deeper and more comprehensive understanding than that demonstrated when managers parrot facts, resort to empty slogans, or accept information without critical thought.

In the future emergency managers will face changes and advances in the workplace and in the world at large that we cannot even guess at today. It is more important than ever to switch from an emphasis on rote learning, which is quickly outdated, to an emphasis on the processes of thinking, learning, and questioning. This switch from content to process is required by the massive changes in what emergency managers need to know and need to be able to do when they leave the classroom if they are to succeed at a time when the only certainty is the rapidly accelerating rate of change.

Education is a process of helping people to become personally empowered. Teaching emergency managers to think critically can enable them to take more control over both their own learning and their own destiny, which translates into empowered communities. When people are able to think carefully about issues and decisions, they are empowered to thoughtfully choose their own paths to follow--they become self-directed--rather than following others' directions. For all of us, becoming critical thinkers influences how we see the world, expands who we are, and changes the way in which we make choices and the impact those choices have on the quality of our lives.

In the constructivist view, knowledge does not come packaged in books, in journals, on computer disks, or on tape recordings (or in professors' and students' heads) to be passed intact from

one to another. Those things contain information, not knowledge. Rather, knowledge is a state of understanding and can exist only in the mind of the individual knower. As such, knowledge must be constructed by each individual through the process of trying to make sense of new information in terms of what that individual already knows. Thus, in the constructivist view of teaching and learning, learners think about new information in such a way that they transform that material in some manner, thereby constructing new knowledge. The practical implication of this perspective is that emergency managers need to be taught how to engage effectively in this knowledge construction process--that is, they need to be taught how to think critically.

The hallmark of a critical thinker is an inquiring mind. Good thinkers are good questioners. A broad definition of critical thinking includes not only knowledge construction of the creation of meaning but also the ability to search for and use meaning.

We need to focus on the increasingly diverse composition of society. The changing nature of our society points to the need for sensitivity toward those different than ourselves. Providing students of emergency management with a basis for understanding and appreciating a wide range of personal and cultural differences is a critically important goal, and courses are needed that devote serious attention to issues of sustainable hazards mitigation in a multicultural environment.

Students entering the profession of emergency management will also be changing. More than half of all college students in the United States are now female, a substantial shift in the composition of student populations over the last decade. There are also increasing numbers of students from ethnic minorities and recent immigrant groups, resulting in a change, quite literally, in the complexion of higher education. The complexion of emergency managers needs to be a reflection of society.

As the gap between the haves and have-nots in society continues to grow, it is even more important that future emergency managers in all sections of the United States come from underrepresented ethnic groups. An increasing proportion of our population are not native English speakers; many bring different traditions with them and offer opportunities for the expression of diverse viewpoints that were not available with a more homogeneous society. This greater variety of cultures also brings with it new occasions for misunderstanding and prejudice unless traditional assumptions about cultural differences and minority groups also change. We need to prepare emergency managers to become global citizens, which requires a curriculum that reflects worldwide contributions to knowledge and that applies knowledge to worldwide situations.

The changing nature of our society can revitalize the emergency management curriculum and create a vast array of exciting possibilities, if we plan and prepare appropriately. Of course, questions will have to be answered. Should the curriculum emphasize synthesis or specialization, scholarship or training, choices or requirements, depth or breadth, understanding or skills, ethical commitment or ethical neutrality? These issues appear to shift one way or the other depending on current moods and are never fully resolved. A comprehensive curriculum is an intentional design for learning negotiated by faculty in the context of social expectations and students' needs.

Educators in emergency management can respond successfully to the challenges of equity, diversity, and quality by developing curricula that include both common and diverse heritages. The transformation of the curriculum to include ethnic and cultural diversity, racial justice, gender analysis, and environmental consciousness require faculty catalysts for change. Institutions of higher learning tend

to gravitate against innovation and real transformation. Collegiality will be tested to its limits. What is apparent is that revisions in the curriculum alone are not sufficient. Significant attitudinal and institutional changes must be made among professors and administrators in our universities if the curriculum changes are to have the desired impact on the values, attitudes and actions of emergency managers.

If our unified objective is to prepare emergency managers to be effective members of an extraordinarily diverse society, how ought that be achieved? In the final analysis, we must be able to convey the revised curriculum in the most powerful manner, to foster the most receptive environment for learning and understanding, for self-awareness and intergroup sensitivity. Surely, it is not knowledge alone that we are to convey but a whole set of attitudes and affect. The number and range of new technologies are increasing at a dizzying pace. It is apparent that these advances can help us work more quickly and more efficiently than ever before. However, the potential in these new forms of media lies not just in their speed, but in their ability to completely alter the way we think, learn, remember, and communicate information.

One of the primary forces driving the changes in society is the exponential growth of technology. Technology now allows us to instantly communicate with anyone in virtually any corner of the world. We need to incorporate ways of using new technologies to enhance teaching, learning, and application to the emergency at hand.

Changing technologies and demographics require that the way teaching and learning are achieved must also change. Rural groups that used to be isolated can now participate in urban experiences via electronic networks, down links, and other innovations that make distant learning possible. Active learning can be encouraged with interactive video technology and cooperative learning experiences.

Numerous suggestions have been made throughout this discussion for improving college-level instruction. If faculty and administrators concerned about improving emergency management education were to adopt the changes that are suggested that would be a good start. But a critical step would still be missing--assessing the effect of the changes on learning. A meaningful assessment of learner outcomes is the only way of answering these questions--it is the only way to determine what works in emergency management education.

We need to consider ways in which we can determine how and if students of emergency management are learning what they need to learn. The only way to know if managers have become more cooperative, more knowledgeable, less prejudiced, and more skilled is by assessing cognitive and emotional growth over their educational experience. We need an overview of the issues involved in the assessment of learning outcomes.

What I am calling for is a truly radical, systemic change in the way emergency management education does business. And change is difficult in any form of higher education. But change is possible if enough people care about teaching and learning. Making wise choices about what to believe and what to do requires the ability to think critically-that is, to analyze the arguments presented, make inferences, draw logical conclusions, and critically evaluate all relevant elements, as well as the possible consequences of each decision. This is missing from current curriculum in emergency management. Changing curriculums proceeds slowly, and change will be met with resistance.

Recommendations for Future Action

(1)   Convince a journal editor to put out a call for papers on a special topic called "The Profession of Emergency Management: Creating a Core Curriculum." Suggested journals include the **Natural Hazards Review** and the **International Journal of Mass Emergencies and Disasters**.

(2)   Organize a workshop on "The Profession of Emergency Management: Creating a Core Curriculum." Invite academics from multiple disciplines and seasoned emergency managers to collaborate, debate, and create the core curriculum needed to advance emergency management to the level of profession.

(3)   Contact the directors of the degree programs in Emergency Management located in other first world nations (such as Australia and Great Britain). Determine the adaptability of their core curriculum for uses in the United States.

(4)   Gain support of university administrators who are supporters of interdisciplinary degree programs. A starting point could be university's offering interdisciplinary degrees in Environmental Studies.

REFERENCES

Mileti, Dennis S. 1999. **Disasters by Design: A Reassessment of Natural Hazards in the United States**. Washington, D.C.: National Academy of Sciences, John Henry Press.

APPENDIX A: ACADEMIC INSTITUTIONS OFFERING TRAINING OR EDUCATIONAL OPPORTUNITIES IN HAZARDS AND/OR EMERGENCY MANAGEMENT

Institution	Web site
Anna Maria College, Paxton, MA	http://www.annamaria.edu/
Arizona State University-East, Mesa, AZ	http://www.east.asu.edu/
Arizona State University, Tempe, AZ	http://www.asu.edu/
Arkansas Tech University, Russellville, AR	http://www.atu.edu/
Caldwell Community College, Lenoir, NC	http://www.caldwell.cc.nc.us/
California Specialized Training Institute, San Luis Obispo, CA	http://www.csti.org/
California State University-Chico, Chico, CA	http://www.csuchico.edu/
California State University-Fullerton, Fullerton, CA	http://www.fullerton.edu/
California State University-Long Beach, Long Beach, CA	http://www.csulb.edu/
California State University-Los Angeles, Los Angeles, CA	http://www.calstatela.edu/
Center for the Study of Emergency Management, Claremont, CA	e-mail: wbalda@xc.org
Central Carolina Technical College, Sumter, SC	http://www.sum.tec.sc.us/
Central Community College, Columbus, NE	http://cccins.gi.cccneb.edu/
Central Missouri State University, Warrensburg, MO	http://www.cmsu.edu/
Chattanooga State Technical Community College, Chattanooga, TN	http://cstcc.chattanogga.net/
Cincinnati State Technical and Community College, Cincinnati, OH	http://www.cinstate.cc.oh.us/
Clackamas Community College, Oregon City, OR	http://www.clackamas.cc.or.us/
Clark University, Worcester, MA	http://www.clarku.edu/
Clemson University, Clemson, SC	http://www.clemson.edu/
Cogswell Polytechnical College, Sunnyvale, CA	http://www.cogswell.edu/
College of Eastern Utah, Price, UT	http://www.ceu.edu/
Community College of Allegheny County, Pittsburgh, PA	http://www.ccac.edu/
Delaware Technical and Community College, Wilmington, DE	http://dtcc.edu/stanton-wilmington/
Eastern Michigan University, Ypsilanti, MI	http://www.emich.edu/
Empire State College, Saratoga Springs, NY	http://www.esc.edu/

Florida International University, Miami, FL	http://www.fiu.edu/
Florida State University, Tallahassee, FL	http://www.fsu.edu/
Frederick Community College, Frederick, MD	http://www.fcc.cc.md.us/
Frontier Community College, Fairfield, IL	http://www.iecc.cc.il.us/fcc/
Front Range Community College, Fort Collins, CO	http://frcc.cc.co.us/
Garland County Community College, Hot Springs, AR	http://www.gccc.cc.ar.us/
George Washington University, Washington, DC	http://gwis.circ.gwu.edu/
Georgia Institute of Technology, Atlanta, GA	http://www.gatech.edu/
Georgia State University, Atlanta, GA	http://www.gsu.edu/
Hampton University, Hampton, VA	http://www.hamptonu.edu/
Harvard School of Public Health, Boston, MA	http://www.harvard.edu/
Hope International University, Fullerton, CA	http://www.hiu.edu/
Jackson State University, Jackson, MS	http://www.jsums.edu/
Jacksonville State University, Jacksonville, AL	http://jsucc.jsu.edu/
John Jay College of Criminal Justice, New York, NY	http://www.jjay.cuny.edu
Laramie County Community College, Cheyenne, WY	http://www.lcc.whecn.edu/
Lewis and Clark Community College, Godfrey, IL	http://www/lc.cc.il.us/
MCP Hahnemann University, Pittsburgh, PA (formerly Allegheny University of Health Sciences)	http://www.auhs.edu/
Millersville University of Pennsylvania, Millersville, PA	http://marauder.millersv.edu/
Minnesota State Colleges and Universities, St. Paul, MN	http://www.MnSCU.edu/Home.html
National Interagency Counter-Drug Institute, San Luis Obispo, CA	(No Internet contact available)
Northern Illinois University, Dekalb, IL	http://www.niu.edu/
Oklahoma State University, Stillwater, OK	http://pio.okstate.edu/
Pennsylvania State University, Harrisburg, PA	http://www.hbg.psu.edu/
Pennsylvania State University, University Park, PA	http://www.psu.edu/
Portland Community College, Portland, OR	http://www.pcc.edu/

Princeton University, Princeton, NJ	http://www.princeton.edu/
Quincy College, Quincy, MA	http://www.ci.quincy.ma.us/
Red Rocks Community College, Lakewood, CO	http://www.rrcc.cccoes.edu/
Rochester Institute of Technology, Rochester, NY	http://www.rit.edu/
Rutgers University, New Brunswick, NJ	http://www.rutgers.edu/
Saint Joseph's University, Philadelphia, PA	http://www.sju.edu/
St. Petersburg Junior College, St. Petersburg, FL	http://www.spjc.cc.fl.us/
Salt Lake Community College, Salt Lake City, UT	http://www.slcc.edu/
Santa Monica Community College, Santa Monica, CA	http://www.smc.edu/
Scott Community College, Bettendorf, IA	http://www.eiccd.cc.ia.us/scc/
Seattle Pacific University, Seattle, WA	http://www.spu.edu/
Slippery Rock University, Slippery Rock, PA	http://www.sru.edu/
South Dakota State University, Brookings, SD	http://www.sdstate.edu/
Southern Illinois University, Carbondale, IL	http://www.siu.edu/
Tennessee Technological University, Cookesville, TN	http://www.tntech.edu/
Texas A&M University, College Station, TX	http://www.tamu.edu/
Texas Tech University, Lubbock, TX	http://www.ttu.edu/
Thomas Edison State College, Trenton, NJ	http://www.tesc.edu/
Tufts University, Paxton, MA	http: //www.tufts.edu/
University of Akron, Akron, OH	http://www.uakron.edu/
University of Alabama-Birmingham, Birmingham, AL	http://www.uab.edu/
University of California Extension, Berkeley, CA	http://www.berkeley.edu/
University of California-Los Angeles, Los Angeles, CA	http://www.ucla.edu/
University of California Extension-Riverside, Riverside, CA	http://www.ucr.edu/
University of California Extension-Santa Cruz, Santa Cruz, CA	http://www.ucsc.edu/public/
University of Central Florida, Orlando, FL	http://www.ucf.edu/
University of Colorado-Boulder, Boulder, CO	http://www.colorado.edu/
University of Colorado-Colorado Springs, Colorado Springs, CO	http://www.uccs.edu/
University of Delaware, Newark, DE	http://www.udel.edu/
University of Denver, Denver, CO	http://www.du.edu/
University of Hawaii-Honolulu, Honolulu, HI	http://www.hawaii.edu/
University of Houston, Houston, TX	http://www.uh.edu/
University of Idaho, Boise, ID	http://www.uidaho.edu/

University of Kansas, Lawrence, KS	http://www.ukans.edu/
University of Kentucky, Lexington, KY	http://www.uky.edu/
University of Louisville, Louisville, KY	http://www.louisville.edu/
University of Maryland, College Park, MD	http://www.umcp.umd.edu/
University of Massachusetts-Amherst, Amherst, MA	http://www.umass.edu/
University of Miami, Coral Gables, FL	http://www.miami.edu/
University of Michigan-Flint, Flint, MI	http://www.flint.umich.edu/
University of Nevada-Las Vegas, Las Vegas, NV	http://www.unlv.edu/
University of New Orleans, New Orleans, LA	http://www.uno.edu/
University of North Carolina, Charlotte, NC	http://www.uncc.edu/
University of North Texas, Denton, TX	http://www.unt.edu/
University of Puerto Rico, Carolina, PR	http://www.upr.clu.edu/upri/
University of Phoenix, Fountain Valley, CA	http://www.uophx.edu/socalif/
University of Richmond, Richmond, VA	http://www.urich.edu/
University of South Carolina, Columbia, SC	http://www.csd.scarolina.edu/
University of South Dakota, Vermillion, SD	http://www.usd.edu/
University of Southern California, Los Angeles, CA	http://www.usc.edu/
University of Tennessee, Chattanooga, TN	http://www.utc.edu/
University of Tennessee, Knoxville, TN	http://www.utk.edu/
University of Utah, Salt Lake City, UT	http://www.utah.edu/
University of Washington, Seattle, WA	http://www.washington.edu/
University of Wisconsin, Oshkosh, WI	http://www.uwosh.edu/
Villanova University, Villanova, PA	http://www.vill.edu/
Washington University, St. Louis, MO	http://www.wustl.edu/
Western Illinois University, Macomb, IL	http://www.wiu.edu/
West Virginia University, Morgantown, WV	http://www.wvu.edu/
York County Technical College, Wells, ME	http://www.yctc.net/

APPENDIX B: EMERGENCY MANAGEMENT AGENCIES OFFERING TRAINING AND EDUCATIONAL OPPORTUNITIES IN HAZARDS AND EMERGENCY MANAGEMENT

Alaska Division of Emergency Services
Arizona Division of Emergency Management
Arkansas Office of Emergency Services
California Office of Emergency Services
Colorado Office of Emergency Management
Connecticut Office of Emergency Management
Florida Division of Emergency Management
Georgia Emergency Management Agency
Idaho Bureau of Disaster Services
Illinois Emergency Management Agency
Indiana Emergency Management Agency
Indiana Public Safety Training Institute
Iowa Emergency Management Division
Kansas Division of Emergency Management
Kentucky Division of Disaster and Emergency Services
Louisiana Office of Emergency Preparedness
Maine Emergency Management Agency
Maryland Emergency Management Agency
Massachusetts Emergency Management Agency
Michigan Emergency Management Agency
Minnesota Division of Emergency Management
Missouri State Emergency Management Agency
Nebraska Emergency Management
Nevada Division of Emergency Management
New Hampshire Office of Emergency Management
New Mexico, Department of Public Safety
New York State Emergency Management
North Carolina Emergency Management
North Dakota Division of Emergency Management
Ohio Emergency Management Agency
Oklahoma Department of Civil Emergency Management
Oregon Emergency Management
Pennsylvania Emergency Management Agency
Rhode Island Emergency Management Agency
South Carolina Emergency Preparedness Division
South Dakota Department of Military and Veterans' Affairs
Tennessee Emergency Management Agency

Texas Division of Emergency Management
Utah Division of Comprehensive Emergency Management
Vermont Emergency Management
Virginia Department of Emergency Services
Washington State Emergency Management
Wisconsin Emergency Management
Wyoming Emergency Management Agency

APPENDIX C: TABLES WITH SUPPORTING DATA

Table 1. Percent of Colleges and Universities with Emergency Management Education (N=945)

Institutions in Sample	n	%
Have Emergency Management program	44	4.66
Have EM Courses-no program	69	7.30
Total	113	11.96
Emergency Management Program		
Have EM certificate, concentration, minor	14	1.48
Have EM Associate's Degree	9	.95
Have EM Bachelor's Degree	6	.63
Have EM Post-Graduate Degree	15	1.59
Total	44	4.66
EM courses-no program		
Offer one or more EM courses	42	4.44
EM Program being proposed	22	2.33
Bachelor's Degree-EM related	5	.53
Total	69	7.30
EM-related courses-no EM program		
Fire courses-no Emergency Management	178	18.83
Hazardous materials courses-no EM	152	16.08

Table 2. Degrees and Courses Offered by U.S. Colleges and Universities with Emergency Management Education (N=113)

Institutions in Sample	n	%
Have Emergency Management program	44	38.94
Have EM Courses-no program	69	61.06
Total	113	100.00
Emergency Management Program		
Have EM certificate, concentration, minor	14	12.39
Have EM Associate's Degree	9	7.96
Have EM Bachelor's Degree	6	5.30
Have EM Post-Graduate Degree	15	13.27
Total	44	38.94
EM courses-no program		
Offer one or more EM courses	42	37.16
EM Program being proposed	22	19.46
Bachelor's Degree-EM related	5	4.42
Total	69	61.06

Table 3. Degrees and Courses Offered by U.S. Colleges and Universities with Emergency Management Education and State Offices of Emergency Management (N=157)

Institutions in Sample	n	%
Have Emergency Management program	44	28.03
Have EM Courses-no program	69	43.94

State OES with EM courses	44	28.03
Total	157	100.00

Table 4. Emergency Management related Bibliography used in Emergency Management courses (N=157)

Emergency Management Bibliography	n	%
General Emergency Management	102	65
Profession of Emergency Management	91	58
State and Local Emergency Management	105	67
Emergency Management Skills Development	113	72
Disaster Planning and Preparedness	74	47
Disaster Warning Systems and Citizen Response	66	42
Disaster Response and Operations	74	47
Hazards Prevention and Mitigation	83	53
Disaster Relief and Recovery	83	53
Citizen and Community Disaster Preparedness	74	47
Information Technology and Emergency Mgmt.	57	36
Biological, Toxic Agent and Epidemic Hazards	46	29
Business/Industry Crisis/Accident Management	39	25
Earthquake, Tsunami and Geologic	33	21
Floods, Flash Floods, and Dam Failure	58	37
Forest Fire, Wildfire and Conflagration	47	30
Hazardous Materials	58	37
Hurricane, Typhoon, Cyclone, Coastal Erosion	38	24
Landslide, Mudslide, Rockslide Hazard	25	16
National Security/Terrorism Hazards	8	5
Nuclear Power Plants	8	5
Thunderstorms, Lightning and Tornado	33	21

Transportation Accidents	8	5
Volcano	8	5
Winter and Snow Storms, Blizzards, Avalanches	8	5
Public Administration and Emergency Mgmt.	20	13
Sociological Aspects of Disasters	24	15
Political Aspects of Disasters	11	7
Economic Aspects of Disasters	8	5
Research Methods and Analysis	0	0
Fire Community and Emergency Management	20	13
Public Health and Emergency Management	11	7
Ethics and Emergency Management	8	5
Media, Disasters and Emergency Management	20	13
Legal Issues in Emergency Management	11	7
Psychological Dimensions of Disaster	33	21

Table 5. Average number of courses offered (N=157)

	n	%
One to five courses	59	38
Six to ten courses	81	51
More than ten courses	17	11
Total	157	100

Table 6. Average number of students per course (N=79)[*]

	n	%
One to ten students	47	60
Eleven to twenty students	16	20
Twenty-one to thirty students	13	17
Thirty-one to forty students	2	2
Forty-one or more students	1	1
Total	79	100

[*] Missing information in 78 institutions

Table 7. Average number of EM program graduates per year? (N=33)[*]

	n	%
One to ten students	17	52
Eleven to twenty students	7	21
Twenty-one to thirty students	7	21
Thirty-one to forty students	2	6
Total	33	100

[*] Missing information in 11 EM programs

Table 8. Emergency Management courses offered through Distance Learning Programs (N=157)

	n	%
Yes	27	17
No	130	83
Total	157	100

Table 9. Emergency Management related Bibliography used in courses by Emergency Management Program, Courses without a program and State OES courses offered

Number in cell refers to the percentage of courses using the reference material	EM program (n=44)	EM courses no program (n=69)	State OES courses (n=44)
General Emergency Management	50	58	91
Profession of Emergency Management	95	16	86
State and Local Emergency Management	91	32	98
Emergency Mgmt Skills Development	86	51	91
Disaster Planning and Preparedness	52	17	89
Warning Systems and Citizen Response	48	12	84
Disaster Response and Operations	66	13	82
Hazards Prevention and Mitigation	80	20	77
Disaster Relief and Recovery	77	28	68
Citizen/Community Preparedness	52	16	91
Information Technology and Emer. Mgmt.	64	20	34
Biologic, Toxic Agent, Epidemic Hazards	43	22	27
Business/Industry Crisis/Accident Mgmt	14	7	64
Earthquake, Tsunami and Geologic	18	16	32

Floods, Flash Floods, and Dam Failure	50	25	43
Forest Fire, Wildfire and Conflagration	52	10	39
Hazardous Materials	55	4	70
Hurricane, Typhoon, Cyclone, Coastal Erosion	34	13	32
Landslide, Mudslide, Rockslide Hazard	30	6	18
National Security/Terrorism Hazards	0	3	14
Nuclear Power Plants	9	0	9
Thunderstorms, Lightning and Tornado	27	4	41
Transportation Accidents	5	0	14
Volcano	11	3	2
Winter Storms, Blizzards, Avalanches	11	3	2
Public Administration & Emergency Mgmt	25	1	18
Sociological Aspects of Disasters	34	10	5
Political Aspects of Disaster	18	3	2
Economic Aspects of Disaster	14	1	2
Research Methods and Analysis	0	0	0
Fire Community and Emergency Mgmt	27	0	18
Public Health and Emergency Management	20	1	2
Ethics and Emergency Management	16	0	2

Media, Disasters and Emergency Mgmt	25	1	18
Legal Issues in Emergency Management	20	1	2
Psychological Dimensions of Disaster	41	6	25

Table 10. FEMA Regions by Courses offered through Colleges and Universities and State Offices of Emergency Services

Number in cell refers to the percentage of schools or OESs that offer courses in that region.	College and University EM Courses (n=113)	State OES EM courses (n=44)
Region I: CT, MA, ME, NH, RI, VT	7	5
Region II: NY, NJ, PR, VI	6	7
Region III: DC, DE, ME, PA, VA, WV	14	14
Region IV: AL, FL, GA, KY, MS, NC, SC, TN	19	18
Region V: IL, IN, MI, MN, OH, WI	12	11
Region VI: AR, LA, NM, OK, TX	7	11
Region VII: IA, KS, MO, NE	4	9
Region VIII: CO, MT, ND, SD, UT, WY	9	9
Region IX: AZ, CA, HI, NV	18	9
Region X: AK, ID, OR, WA	4	7
Total	100	100