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EDUCATION, SUSTAINABLE DEVELOPMENT,
AND DISASTERS:
AN INTERACTIVE AND
COLLABORATIVE APPROACH

Havidán Rodríguez
Benigno Aguirre

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Havidán Rodríguez, Ph.D.
Benigno Aguirre, Ph.D.
Disaster Research Center
University of Delaware

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The Disaster Research Center (DRC) at the University of Delaware has been commissioned to draft a concept paper focusing on education, sustainable development, and disasters for dissemination during the World Conference on Disaster Reduction, in Kobe, Japan. One of the primary objectives of this concept paper is to propose an "action plan" that addresses the most important issues and concerns and provides concrete recommendations particularly focusing on disasters and education, which can also serve as a useful tool during the United Nations Decade of Education for Sustainable Development (2005-2014).

We recognize that there are a variety of difficulties and limitations to any type of theoretical, methodological or applied approach that aims to deal with such controversial topics (that also bring to the forefront issues related to development, vulnerability, and disasters) and that focus on very diverse and heterogeneous geographical areas throughout the world that face a complexity of social, cultural, economic, political, and environmental issues and challenges. Therefore, it would seem inappropriate to propose an "action plan" that attempts to address these diverse and complex issues and tries to "fit" these heterogeneous populations and cultural groups under the same umbrella. This problem is further exacerbated by the general lack of educational baseline knowledge on disasters and "scientific illiteracy," particularly on the role and contributions of the social sciences in disaster planning and management. Another concern is how to generate a knowledgebase and educational practices that can be disseminated to a diverse set of communities, particularly at the grassroots level, to educate the public on issues focusing on disaster mitigation, preparedness, response, recovery. This approach must also consider and integrate the practices and strategies developed by local communities and populations to better cope with, respond to, and recover from hazards and disasters (e.g., resilience).

A Theoretical Approach to Disaster Education

There have been many approaches to the issue of promoting and disseminating education and educating the public. Our particular point of departure is Paolo Freire's educational theory. As Smith (1997, available in <http://www.infed.org/thinkers/et-freir.htm>) indicates, Freire emphasized the importance of dialogue rather than following a set of curricula; working and educating each other rather than the traditional teacher-student (master-apprentice) approach; making a difference in the community through mutual respect and praxis; building social capital; and developing an activist social conscience based on shared experiences. From this theoretical perspective, education is an interactive process of mutual learning among people and institutions in which science and scientists do not have a privileged position. Educational approaches and action plans, no matter how well intentioned, should not be imposed on people. People and their communities must be engaged in education on an equal footing. What we propose is a grassroots-level approach to education for disaster mitigation and preparedness. This approach must focus on the

communities' needs and priorities and take into account their knowledgebase, practices, institutional arrangements, and culture.

Freire's approach to education is particularly appropriate in this context, for international educational programs for disaster management and mitigation belong to the genre of the international technology transfer literature which documents the widespread failures of attempts to tell people what to do. This literature documents the importance of the social, political, economic, and cultural assumptions, often unexamined, that are keys to the successful transfer and effective use of scientific information and programs. Aguirre's (1992) analysis of the successes and failures of severe weather related technology transfers to Puerto Rico identified as a key element impacting technology transfers the relative degree of socio-cultural isomorphism between the social organization of the host society and the assumptions constituting the basis of the scientific and technological products and programs involved in the transfer. These include:

1. Extent and type of local participation in the transfer of disaster technology. One of the most difficult issues faced by all technology transfer programs is how to facilitate the effective incorporation of the community and local actors into the organization and management of protective measures that would mitigate the effects of disasters. The overwhelming facts of the matter are that "telling them what to do" does not work. They must decide what to do, hopefully incorporating and profiting from knowledge of the "other."
2. The impact of the technology that is transferred on the relationships between the recipients of protective services and the producers of the technology and the emergency management personnel and other government representatives. Often it is the case that implementing the technology necessarily brings about profound changes in the relationships of the communities and the government and its agencies, and precipitate widespread social conflict. For example, evacuation of populations from areas threatened by volcanic eruptions introduce uncertainties about the future of these communities, involving as they do the disruption of residential arrangements, established modes of economic livelihood, and family and cultural subsystems. Such disruptive effects can be massive; the scientific monitoring and decision to evacuate do not include community opinions and wishes even as they have very destructive potentials, particularly when temporary evacuations become permanent population displacements.
3. The goals of the technology that is being transferred and the elements of the society that it wishes to change. The goals to protect communities at risk of disasters are inclusive and imply changing very significant aspects of the ways of life and power arrangements of communities and societies, which reduce the likelihood that they will be obtained.
4. Nature of the bureaucracy managing the transfer. This transfer is done by bureaucracies in both sending and receiving societies. It is very often the case that the political system and the emergency management system existing in the host society are much more rudimentary than is assumed by the technology; they are not ready to receive it. It is also the case that at times international programs of assistance use inappropriately criteria of scientific excellence to guide the transfer of disaster technology; very high technical sophistication is

introduced in contexts in which other more culturally appropriate and practical, low-tech solutions are available. This bureaucratic mismatch is a common source of failures

5. Related to the previous matter is the technical proficiency, professionalism, and relative autonomy from politics and corruption of the local bureaucracy involved in the transfer. Often, international programs use an unwritten idealized view in which the science and technical criteria creating the disaster products such as warning systems, or protection of the coastline, or evacuation of populations threatened by volcanic eruptions, for example, are assumed to operate in isolation from local politics and established interests. This assumption of scientific autonomy is seldom if ever correct.

Theory and Praxis

What then should be the approach to disaster education if we take seriously Freire's ideas? It is useful to make a distinction between the "outsider" and the "insider." We, the international community, are the "outsiders." We generally have resources, knowledge, and insights about the technologies and the processes that could work in specific settings to ameliorate and mitigate the impact of specific hazards. They, the "insiders," are the community we wish to work with and benefit. They have their own resources, knowledge about disaster amelioration and mitigation, and their own ideas about how to carry out these goals. Disaster education must involve the integration of the "insider" and the "outsider" accounts and the creation of solutions that would not be known at the time the process starts. The desired outcome is a creative synthesis of these various values and truths through a highly interactive and collaborative process between "insiders" and "outsiders." One of our long-term goals, through this educational process, is to bridge the gap and differences between these groups so that we are able to share our knowledge, common experiences, and expertise in order to enhance disaster preparedness and response in these communities.

Mechanisms: Training Programs

In order for educational/training initiatives to be effective, they must be understood, meet the needs of people, provide accurate and reliable information, and be of some inherent value to the populations or communities that are being targeted. These initiatives must be the product of collaborative and interactive experiences for all parties involved in the training process. Moreover, they must contribute to the growth and development of the individual participants and their organizations, thus contributing to enhancing the quality of life in their respective communities. Participants in these programs should be members of the communities we wish to assist. They will be selected to participate in the program on the basis of an evaluation of the quality of their disaster education projects.

The training model we wish to create borrows from the University of Michigan's Professional Exchange for Applied Knowledge (PEAK). PEAK is part of the Population Fellow's Program and is funded by Compton Foundation, the William and Flora Hewlett Foundation, the United Nations Foundation, and USAID. PEAK is based on the premise that in order for education and training to be effective, we must take into account the needs and interests of communities, organizations, and individuals seeking to address the problems, challenges, or opportunities that they confront. The PEAK program provides professionals from various regions of the world a holistic and integrated

educational and training experience that is customized for the trainees and their respective organizations. PEAK trainees have generated projects (funded by PEAK and their home institutions) which focus on programming (youth, HIV, male involvement, quality of care, population-environment); management (supervision, strategic planning, project design); research (surveys, methods, monitoring and evaluation); communication (advocacy, behavior change, community mobilization); sustainability (fundraising, income generation); and networking and partnership building (<http://www.sph.umich.edu/pfps/peak/overview-peak.htm>).

Applications to the PEAK program must include a short proposal focusing on a particular population, presenting a reproductive health or family planning initiative that is relevant and important to their organizations and communities. Applicants must have the endorsement of their immediate supervisors and organizations. Also, there are pre- and post-workshops for PEAK trainees which require the participation of their supervisors. "These sessions are designed to improve strategic planning, foster regional collaboration, explore technical topics, and develop information-sharing networks among participants¹." These strategies are aimed at ensuring that when trainees return to their respective institutions they will have the institutional support to carry out their research/training agenda or program development, therefore, benefiting their organizations and communities. This also allows for the institutionalization and systematization of the program so that they continue to exist beyond the trainee's participation in the PEAK program and the corresponding funding period.

PEAK Fellows spend an average of two to four months developing the knowledge, expertise, and technical skills that will be essential for them to accomplish the proposed goals and initiatives at their home organizations. Trainees also participate in an internship experience at leading regional and international organizations. The program promotes cross-cultural training and learning by encouraging trainees to be exposed to and work, as short-term interns, with organizations and agencies that are compatible with their professional training and cultural needs and interests both in the US and internationally. Trainees have participated in internships in the United States, Zimbabwe, Ecuador, Mexico, Bolivia, Philippines, Peru, and India, among others.

Peak Fellows develop and implement a number of projects which are extremely valuable and needed in their home communities, such as: pilot workshops to train organizational networks to promote sexual education and rights at the state level; mobilizing partners to coordinate on regional population-environment advocacy and programming; improve the job knowledge of clinical staff; empowerment training for youth by adding agriculture and production activities to its existing reproductive health and related interventions; promoting voluntary counseling and testing (VCT) services by training staff to counsel and refer youth for HIV testing and by incorporating AIDS and VCT messages into the organization's existing income-generation and mobile clinic projects; organize network of youth volunteers to promote reproductive health and healthy lifestyles; addressing gender-based violence and reducing the impact of HIV/AIDS; and design and implementation of population-based surveys to evaluate the organization's impact on individual and community-level reproductive health and environmental conditions, among others. As stated in the Population Fellow's Program website, the PEAK Fellowship not only trains

¹ For additional projects and information, see the PEAK's program website <http://www.sph.umich.edu/pfps/peak/overview-peak.htm>.

professionals to become change agents in their communities, but increases the chances that they will return to their communities.

Application of PEAK Practices to Disaster Education

The Disaster Education Project (DEP) that we propose will have a trial and error phase in which the focus will be on a limited number of hazards. A second phase would expand our focus to other natural, human-induced, and chronic hazards. Three hazards (e.g., earthquakes, volcanoes, and hurricanes - typhoons) will be included in the first phase. The proposed training sites will be at the CIESAS hazards program, in Mexico City, under the directorship of Dr. Jesus Manuel Macias M., the Disaster Research Center in Delaware, United States, under the directorship of Havidán Rodríguez, and at the Asian Disaster Reduction Center² in Kobe, Japan. Of course, other centers or hazards' programs would be included in DEP as time progresses. Participants or DEP trainees will participate in an internship in an agency, organization, or government unit in their countries of origin in which they will gain first hand disaster-related experience about the educational matters of interest to them. They will also take classes and receive training for a maximum of four months in these three institutions to strengthen their understanding of these educational matters. Foremost guidance to DEP will be the participants' passion and their interest around which training and research experience will be tailored.

Participants in the DEP will be selected by a committee composed of representatives from the participating lead institutions. The outcome should be a series of disaster education projects focusing on the amelioration of the consequences of hazards and disasters in local communities with a particular emphasis on reducing vulnerability through increasing resilience. Potential topics for such projects will include capacity building, educational efforts to improve land use and planning, the engineering of safe buildings and building codes and their enforcement, environmental protection, emergency management programs and principles, search and rescue safe practices and technologies, and other topics related to disaster management and planning.

DEP will propose answers to a number of very interesting questions focusing on education and disasters. For example, what are the primary issues that need to be addressed in order to enhance disaster education? What are the primary areas or thrusts that should be developed in this context? What are the challenges, lessons learned, and long-term impacts? If we aim to recommend strategies to educate the public, what are the steps that we should follow? How can we promote change through education? What are strategies that have been generated that work and do not work; what new strategies should we recommend; and what are the priority areas? How can we develop strategies that are holistic and integrated with other disciplines? How can we generate educational practices that will be disseminated to the general population? How do we adjust these educational practices so that they respond to the needs and cultures of different regions, countries, and communities? How do we reach the population in an effective manner (e.g., outreach)? What should be the expected short-term and long-term outcomes? How do we measure quantitatively and qualitatively our success in this process? How do we know that our strategies are working?

² It is important to note that we have listed centers that can make important contributions to this training program and reflect, from the authors' perspectives, their extensive knowledgebase, research and training experience, and their potential interest in the proposed training program. Further, it is noteworthy that this as a preliminary concept paper. Therefore, the aforementioned Centers have not yet been contacted to determine their interest in participating in this training initiative.

The systematic examination of these and similar questions has not been attempted. The proposed research and training initiative is one step in that direction.