

TOWARDS RESILIENT COMMUNITIES IN DEVELOPING COUNTRIES THROUGH EDUCATION OF CHILDREN FOR DISASTER PREPAREDNESS

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Abstract

In developing countries, educating all levels of the society in disaster threats is not always possible due to the lack of experts and educational materials. Therefore, one of the best ways of publicising awareness programmes can be the integration of these initiatives into children's activities. Since over half of the population in many developing countries is under 18 years old, it is possible to convey vital information to most of the population via the knowledge, skills and enthusiastic motivation of children. They are able to disseminate messages throughout their societies, starting with their parents. Fortunately, the level of acceptance in parents from their educated children is generally high in developing countries. The aim of this paper is to firstly look at awareness raising as a core to all disaster mitigation programmes. The paper then focuses on earthquake education through children. The study will also illustrate this process through a selection of examples of educational campaigns in different developing countries resulting in successful public awareness raising. These programmes strengthen resilience in a community by enabling them to withstand shocks, cope with emergencies when they occur and bounce back from disaster impact.

Introduction

Past experiences have proved that lack of preparedness can result in many problems at the time of disasters and afterwards. With the rapid urbanization, the developing countries are witnessing an observable change in their socio-economic structure which continues for years and even decades. Education can be regarded as one of the best media for making a community prepared for disasters. Unfortunately, in most developing countries educating all levels of the society for disaster preparedness is not always easy due to the lack of expertise and materials. Therefore, one of the

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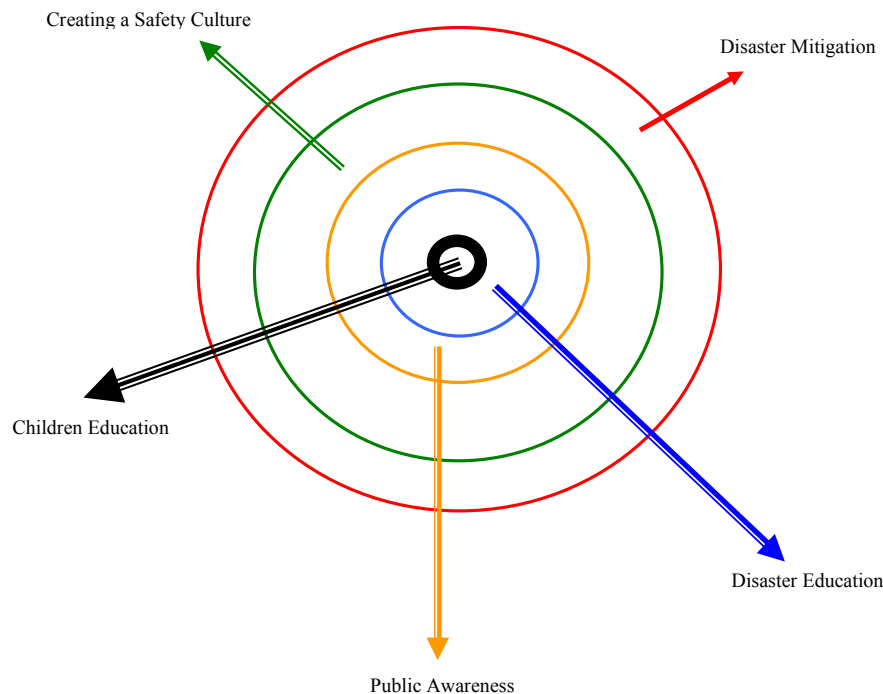
best ways of publicising awareness programmes would be the integration of the awareness initiatives into children's programmes. However, based on the fact that over half of the populations of most developing countries are under 18 years old, it is possible to disseminate vital information regarding disasters and preparedness to most levels of the society through children as they are good messengers in transferring this knowledge to their families. As was mentioned, the level of acceptance in parents from their educated children is generally high in developing countries, and this encourages the decision-makers to invest more and more on education of young generations.

One of the main goals of the International Strategy for Disaster Reduction (ISDR) is to 'reduce risks and make all communities resilient to the effects of natural, technological and environmental hazards'. It also aims to proceed from protection measures to the management of risk through the integration of preventive actions into sustainable development. The aim of enabling all communities to become resilient to the effects of different hazards has been announced in the Inter-Agency Task for Disaster Reduction in April 2000 in Geneva. There is a need for shifting the approach from disaster recovery to disaster reduction and 'focus on human security, people education and training' with the aim to improve community disaster preparedness. This need is receiving increasing attention at present.

Disaster Mitigation

Disaster mitigation is one of the central tenets of any comprehensive disaster management programme. It is evident that the overall goal of disaster reduction and mitigation aims at creating a safety culture. In the meantime and as a key element in mitigation policies within disaster-prone countries, public awareness and education play important roles (Davis, et al 2003). Regarding this, a model in the form of a circle is presented in Figure 1. The model of the disaster mitigation circle narrows down to public awareness and finally to education as a core element for raising the awareness of the public. It becomes even narrower and focuses mainly on educating children with the aim of transferring the knowledge from them to their families. It also highlights the interrelationships of all the rings of this circle and the way disaster mitigation is linked to public awareness.

Figure 1: The overall disaster mitigation circle and interrelationships of the rings



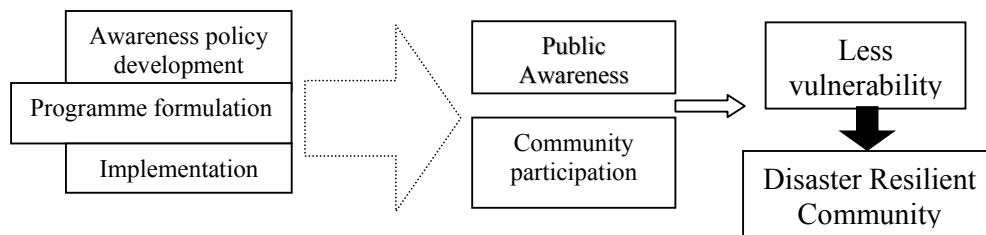
Public Awareness Programmes

The importance of developing effective and sustainable public awareness programmes became evident during the International Decade for Natural Disaster Reduction (IDNDR). These initiatives included the practical ways for individuals and communities to protect themselves from disaster risks. Public awareness is a broad process embracing public education, simulated drills as well as life-saving plans. The objectives of a public awareness programme are achieved by the exchange of specific information through various media concerning ways to ensure personal and community safety to all who are 'at risk' (Davis, 2000). The word 'exchange' denotes that the information needs to be conveyed up the system, from the public to policy-makers as well as down from the disaster community to the public.

Evidence from numerous disasters indicates that where societies had been prepared and educated for damaging events, significant reductions have followed in reduced casualties and physical losses. For example, the dissemination of information on the warning of heavy rains through radio-stations in Mali in 1998 resulted in an effective displacement of over 300 persons in the flooded area. Also, a national programme in Cuba raised the people's awareness of hurricane threats and as a result at the onset of hurricane season in 1998, during Hurricane George, around 700,000 people, together with their cattle were evacuated (Davis et al, 2003).

Disaster preparedness and hazard reduction initiatives can be introduced to people to minimise longer term social and economic disruptions resulting from hazard impacts. The general awareness policy development and its relation to disaster mitigation is shown in Figure 2 (Davis et al, 2003).

Figure 2: Relationship between public awareness policy and disaster reduction



In addition, what should also be considered is about what information is specifically needed by different range of people who are at risk. For example, a seven year old child may encounter the hazard threat the same as his grandfather, but each one requires a very different message to suit different perceptions and everyday circumstances. Also differences in social groups require different information channels or materials.

Disaster Education

Disaster education has been effective from many years ago. It has been proved in many countries that education is one of the best media for making a community prepared for disasters. In other words, one of the best ways of publicising awareness programmes can be the integration of these initiatives into children's programmes in both preschool and school levels. There are various issues on health, safety and hazards that have been incorporated to a greater or lesser extent into the formal curriculum in schools. The aim is to increase the knowledge and understanding of children about risk and teaching them the preparedness issues and also how to react in the time of a disaster (Twigg, 2003).

Why Children?

These days, schools and particularly children present a very crucial role in the development of a culture of prevention. Young people especially the existing generation learn easily and they can act as good channels for transferring the ideas to their families.

They should be encouraged and motivated even from the teachers for a direct and active participation in order to make them involved in making the world move toward a safer living place. The theme of the United Nations 2000 World Disaster Reduction Campaign was “Disaster Reduction, Education and Youth” which aimed to continue and develop a culture of prevention through education channels so that young people can take a pro-active role in understanding risks and reducing the impact of disasters. The campaign notifies that

‘A culture of prevention is something that forms over time. What is needed is a change of attitude, based on the conviction that we do not need to be fatalistic about disaster risks and a willingness to act upon that conviction. The mind-set is best developed at any early age’.

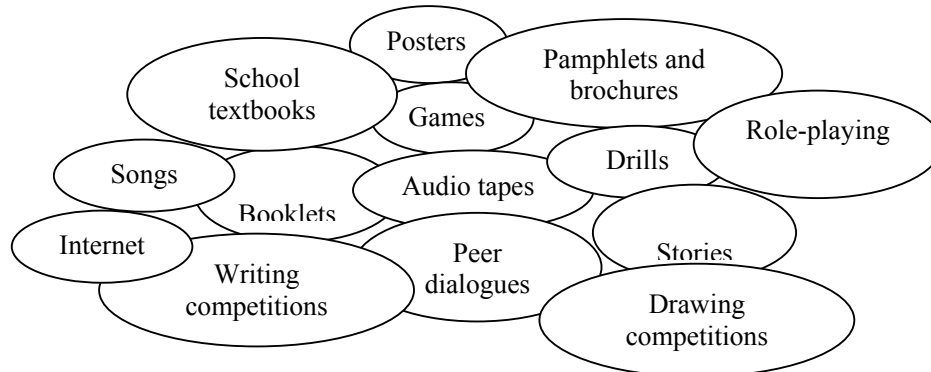
Therefore, children are believed to be more receptive to new ideas than adults and they can also influence their peers and parents. These days many disaster mitigation and preparedness programmes have tried to introduce disaster issues into schools.

Why Preschool and School Levels?

Nursery schools can be an ideal place for children to learn about disasters. They can then pass on to schools with basic background knowledge about disasters and its consequences. In the next level, schools can play a major role in the development of good citizens (Lidstone, 1999). Schools particularly children can contribute in developing a culture of prevention and safety. They play a vital role in the community and are considered as a very important institution in forming the culture of a society. During IDNDR, the strategy of supporting school disaster education was developed. The aim was to instruct the students with the preparedness guidelines in disaster mitigation. The strategy also aimed to raise the public awareness and education toward disasters and risk reduction. The challenge was to shift to the culture of prevention through the school system. In accordance, many countries, such as Iran, Nepal, Vietnam, etc developed strategies for supporting disaster education in schools. The purpose was to include the information that may be used for students as the next generation in order to make them the leaders for raising the awareness of their communities in the future.

It is believed that schools can be used for disseminating knowledge as well as acting as an interface between those who are willing to reduce the impacts of hazards. Therefore, having a plan for disaster education to be inserted in the textbooks of the elementary, secondary and high school students in many parts of the world, developed as well as developing countries such as Iran has been proposed and already implemented. Also various programmes and activities have been designed and used in different parts of the world for teaching children on disasters as shown in Figure 3.

Figure 3: Various media used for teaching about disasters to children



Children Awareness Initiatives

There are various initiatives for raising child awareness regarding disasters, and there are many different media as well as a range of educational materials for schools. Providing a data bank of all the existing materials is difficult, if not impossible, however that is beyond the scope of this paper.

Iran as a developing country has been selected as the case study in this paper. Also few other initiatives from developed as well as developing countries are mentioned. The International Institute of Earthquake Engineering and Seismology (IIEES) in Iran has started the public awareness and preparedness on both the earthquake phenomenon itself and its consequences, plus dissemination of safety culture and policies on how to take essential safety measures for different levels of preschool and school children levels. With the cooperation of Ministry of Education, a pictorial brochure titled *“Earthquake Hazards Reduction at Educational Institutions”* has been produced and widely distributed among Iranian school children. Moreover, education-aid materials such as painting books, comic strips, story books, and crossword puzzles are being developed for even a wider spectrum of the Iranian children and youngsters. A bilingual pictorial booklet entitled *“Earthquake Preparedness”* is conducted with the proper procedures and steps that one should take at home or at work before, during and after an earthquake. Another booklet conducted with the cooperation of UNDP titled *“E for Earthquake”* written in both English and Persian will help children to learn the individual precautions to protect themselves at the time of earthquakes. The scientific concepts of the earthquake and safety measures for reducing its damages have been presented in this workbook in the form of puzzles, illustration and easy-to-read explanations for the children of seven to eleven years of age.

The IIEES safety drill programme has been officially integrated into the curriculum of school children by the Iranian Ministry of Education. The First National drill was held successfully on Nov. 29, 1999 in 15499 high schools in Iran. The Second National drill with the subject of *“Earthquake and Safety”* was held on November 28, 2000 in all Iran’s secondary and high schools. The aim of this drill was to prepare students for the appropriate and quick responses in the time of an earthquake. The educational guidelines were sent to all high schools before the drill by IIEES and were broadcast two weeks before the drill through almost all of the radio channels. On that day, the *“Safety Bell”* was heard between 8:30 to 10:30 a.m. for about 30 seconds from the National radio concurrently in all secondary and high schools in Iran. Hearing the bell, the students were to get to correct sheltering according to the guidelines given by IIEES. Radio programmers broadcast educational guidelines to the public. All radio channels broadcast the programmes related to the drill concurrently. This drill covered about eleven million students at a time in 48 thousand secondary and high schools. IIEES with the cooperation of Ministry of Education, the Red Crescent Society of the Islamic Republic of Iran and Iranian National IDNDR Committee were the organisers of this drill. The last drill in November 2003 covered all levels of school children all

around the country. The earthquake drills have also been organised for preschoolers since 2000 and are underway almost once every year.

Disaster lessons are integrated within different curricula such as science, geography, preparedness book, literature, and practice book for different levels of students in Iran. Since 1991 a six-page chapter, explaining the seismic hazards and safety measures, titled "*Safety Against Earthquakes*" has been inserted in the geography textbook for students of 8th and 12th grades. Also IIEES has authored and designed a special textbook titled "*Earthquake Preparedness*" which is added to the 8th, 9th and 10th grades curricula. A lesson entitled "*Mysteries of Earth*" has been included in the literature textbook of the 8th grade. A similar plan has been implemented for the elementary school textbooks. A chapter has been inserted in the science textbook of 4th grade and a chapter called "*Calmless Earth*" has been included in the 5th grade science book. This nationwide programme is being completed with the cooperation of the Ministry of Education and many related organizations.

Also in other countries such as, Costa Rica, the book entitled "*Como Enfrentar Un Terremoto*" is produced about the geography of earthquakes with guidelines for children and adults. The Fiji Red Cross has produced a kit with lessons and issues for teachers on earthquakes, tsunamis, fire, floods and cyclones (Lidstone, 1999). As examples of school curriculum materials on disasters, in many different developed countries such as Australia and New Zealand, the hazard subject is taught in the geography lesson. In the United States, both hazards and environmental studies are part of the science lesson. Also in UK, teaching about disasters is inserted in geography and science curriculum (Brownlie, 1999).

There are also various websites regarding information on disasters for children. IIEES Public Education Department has provided a website for children, (<http://www.iiees.ac.ir/edu/kids>). The most widely recognised website is FEMA website, (<http://www.fema.gov/kids>), in the United States with tips for children on how to get prepared for disasters. There are also various resources for teachers and parents on the website and the safety rules for disasters. It also contains a 'connection line for kids to kids' that children can give their ideas about disasters and also to submit any drawings for other children to view online. Also USGS has a site for kids, including information on earthquakes, science of earthquakes and earthquake facts. The Australian IDNDR Committee has funded the development of a CD-ROM multimedia programme entitled "*Hazards Happen*" for schools (Lidstone, 1999). In Queensland, Australia, a CD-ROM game has been designed to instruct children for appropriate preparatory behaviours for cyclones called "*Storm watchers*". In this educational package, children are offered a choice of five scenarios in preparation for a cyclone. Children in these scenarios are faced with a range of interesting experiences and social situations (Berry and King, 1998).

It is worth mentioning once again that in designing disaster awareness programmes, many factors need to be considered such as age and sex of the children, however, the overall emphasis of most of these initiatives is still on the safety procedures as what to do before, during or after a natural hazard.

Problems to Overcome

As mentioned before, there have been several disaster education programmes in developed as well as developing countries for children, and most of them are being improved more and more. However, there are some problems which are particularly related to developing countries. One is the great difference between the level of education in the capital and other cities, especially small towns. This is while, in most cases, the victims of disasters in these countries are the people living in small towns and villages. Because of the local cultural problems and religious beliefs of the people living in those areas there is some kind of inherent resistance to every change of manner or

diversion from the traditional live styles. This decreases the level of acceptance of newly-taught materials in general, and even nullifies them in some cases. To overcome this problem it is suggested to choose some selected groups of people from each area for a pre-education process before disseminating the materials to the community, including children. The authors believe that the school teachers are the best candidates for these selected groups of people in those areas.

Another problem is the availability of internet and other information dissemination tools in developing countries which is much less than developed ones. In a recent paper of the authors, the use of internet communication in increasing earthquake disaster awareness and preparedness has been discussed (Izadkhah and Hosseini, 2004). The necessity of contribution devoted by developed countries to developing ones for increasing the mentioned availability is emphasised. This can be, at the same time, much more effective than the aids given to these countries after a disaster such as a devastating earthquake.

Conclusions

It is assumed that educating the general public through children in the early levels of their education is another non-structural mitigative approach which has been increasingly used in disaster mitigation strategies with positive results. Children as the leaders of tomorrow and future can protect themselves and their environment in the long-term through a global culture of prevention. This will help them to guarantee their own, their family and their community safety as they grow up. They are considered as ‘powerful forces’ in behavioural change for the next generation.

It has been well proved that an effective public awareness programme can create an ‘informed and self-reliant’ community able to take protective measures. A programme of public education should become a continuous process which can devise long-term low profile campaigns through general education, or as an integral part of the school curriculum. It is hoped that the continuous implementation of children initiatives in different developing countries result in successful public awareness raising and therefore grow the seeds of less vulnerable and more resilient communities in the future.

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