ROLE OF MOBILE TECHNOLOGY IN DISASTER RISK REDUCTION

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Abstract

The paper presents the findings of a study about the role of Mobile Technology to create awareness about disaster Risk Reduction. A random and stratified sample of 20 schools and colleges of AJ&K and KPK along with 25 faculty members from Allama Iqbal Open University and Natural Disaster Management Authority staff were selected. Alpha reliability has been checked through cronbach alpha. Mode, Mean, median were run on the data collected through questionnaires. The consent of formal education institutions and Non formal education institutions was taken, i.e; Allama Iqbal Open University and Formal educations" heads of institutions" opinions and psychometric response was taken to check the teaching throughMobile technology in order to mitigate the risk of natural disaster in future. The objectives of the study were, to find out that mobile technology is useful in informing all of us about risks and ways to reduce our vulnerability. To explore that the mobile technology is suitable in reducing the risk of disasters in developing countries during and post disaster situations. To describe the effects of disaster risk reduction on the lives of the people. For rationalizing the objectives, the study has focused on identification of the instructional technology. The acceptance level was found about the gravity of natural catastrophe and its destruction in education system, in affected areas. The frequency and tendency of opinions were calculated.As a conclusion; to lessen the risk of natural disaster"s loss in education sector use of mobile in teaching and learning about Disaster Risk Reduction is emphasized.

Keywords: *Disaster Risk Reduction, teaching of Disaster Risk Reduction through Mobiletechnology, Learning through mobile about DRR. Teaching and Learning through mobile in emergency situation*

1. Introduction

Man is vulnerable on earth and faces many manmade and natural disasters. The disasters are inevitable for bear. Disasters and emergencies are fundamental reflections of normal life. They are consequences of the way society structure themselves, economically and socially; the way societies and states interact; and the way that relationships between the decision makers are sustained. Tragedy and loss are inevitable in the life of living beings. Human beings are helpless in front of nature, we cannot change it. But we can reduce the riskof disaster. International day is celebrated on 13 of October every year for disaster risk reduction.

Definition of Disaster

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The definition of natural disasters is any catastrophic event that is caused by nature or the natural processes of the earth. The severity of a disaster is measured in lives lost, economic loss, and the ability of the population to rebuild. Events that occur in unpopulated areas are not considered disasters. So a flood on an uninhabited island would not count as a disaster, but a flood in a populated area is called a natural disaster. http://www.basicplanet.com/natural-disasters

"A disaster is a natural and man-made hazard resulting in an event of substantial extent causing significant physical damage or destruction, loss of life, or drastic change to the environment. It is a phenomenon that can cause damage to life and property and destroy theeconomic social and cultural life of people."https://en.wikiquote.org/wiki/Disaster

Mobile for Development

Recent natural and manmade disasters have taught us that resilient communications are vital to saving lives. Available and emerging technologies are evolving to meet the needs of governments, first responders and citizens in better informing all of us about risks and ways to reduce our vulnerability to them.

The Use of Mobiles in Disasters

To better serve the needs of people affected by disasters, humanitarian organizations must be able to make use of new technologies to train its staff on a number of key subject areas such as humanitarian principles, operations planning and security risk management. Some of these subjects can be delivered through more "traditional" eLearning delivery methodologies such as self-study eLearning and webinar-based coaching. However, due to the very mobile nature of the operations, there is an increasing need to enable humanitarian staff with tools and information that they can access on-the-go. In addition, staff and volunteers need to be equipped with tools to access real-time information on disasters, even before they hit.

The example of local, untrained, taxi drivers coordinating relief efforts, in isolated areas and situations, over traditional radio frequencies illustrates available alternatives to mobile communications when networks go down. Defining who the key players are in preparing for and recovering from disasters is of primary importance. In earthquake 2005, Mobile operators, government agencies and civil society are finding ways to work together in honing mobile approaches to disaster risk reduction and to incorporate key players into the mobile communications process.

The Use of Mobile in Earthquake

The 2010 Haiti Earthquake offers another example where mobile networks went down temporarily and radio again played the crucial intermittent role in coordinating response efforts to the crisis. In other words, disaster response using mobiles can be unpredictable and problematic. The focus in the communications realm, until now, has been on facilitating communications between relief agencies in the short term, usually using two-way radios, Very High Frequency radios and satellite phones. This tends to exclude those directly impacted by disasters. Inclusion is vital and has long-term benefits, but is expensive to deploy and complicated to coordinate. Mobiles can be invaluable in disaster preparedness and recovery efforts. The ubiquity of mobile ownership and network access means mobile phones are becoming the default method of communication and can make positive contributions before, during and after the disaster strikes. The multiplicity of available applications - voice, SMS and broadband -

and citizen familiarity with them increases the range of opportunities. Smartphone games, for example, are helping to prepare school children for catastrophic floods in Thailand and mobile operators are helping to deliver short code-enabled emergency texts in many developing countries. The United Nations has been hard at work in putting together a framework for technology-led disaster communications. The United States Agency for International Development (USAID) has been incorporating mobile technology into disaster response efforts since the 1990s. We are currently defining who the key change agents are at the government policy level and how we can better engage partners in developing a comprehensive approach to reducing risk using mobile and other technologies.

1.1 Statement of Problem

This study was designed to explore the role of mobile technology in disaster risk reduction for avoiding enormous loss.

1.2 Objectives of the Study

1. Find out that mobile technology is useful in informing all of us about risks and ways to reduce our vulnerability.
2. Explore that the mobile technology is suitable in reducing the risk of disasters in developing countries during and post disaster situations.
3. Describe the effects of disaster risk reduction on the lives of the people.

1.3Significance of the Study

1. This study will be helpful for saving the big losses of human and financial resources occurred as a result of natural disasters.
2. This study will be helpful to evaluate the mobile technology has been helpful and further can he very fruitful in creating awareness about disaster risk reduction.
3. The study will be influential for the vulnerable people who faced disasters, as they can get benefit from mobile technology by saving their human and financial assets for optimistic life.

1.4 Delimitations of the Study

The study was delimited to:

- Disaster of Earthquake has been delimited (As there are many types of natural disasters, hurricanes, tsunami, floods, and landslides etc)
- Earthquake 2005 is the delimitation (Among major earthquakes which hit the areas of Pakistan)
- District Muzaffarabad and Distt Mansehra were the major affected districts, which have been taken from 9 earthquake affected districts.
- Colleges and higher secondary schools from both districts have been taken.
- Senior Management of ERRA (Earthquake Reconstruction and rehabilitation Authority), the organization which was aimed to reconstruct and rehabilitate the lives of people, after earthquake 2005.
- All the Faculty members of AIOU (Allama Iqbal Open University) because it is the largest institutions of open and distance learning system. And mobile technology is part of open and distance learning.

2. Analysis

Table- 1: Analysis of the Common Responses to all four Categories of Respondents

S. No	Statements	Faculty Mean	HOI Mean	ERRA Mean	Students Mean	Average Mean
1.	Earthquake 2005 caused very sever destruction in education sector and continuity.	4.7	4.5	4.67	4.1	4.5
2.	After any natural disaster, it always required enormous financial resource for recovery of educational infrastructure	4 .5	4.4	4.8	-	4.6
3.	Application of mobile technology can help resuscitating the paralyzed life by knowledge sharing.	4.15	4.5	4.5	-	4.3
4.	The apps of android can aware about earthquake in affected areas.	4.75	4.4	4.5	-	4.5
5.	Technology of Radio is easy and accessible in disaster struck areas for	4	3.5	3.1	-	3.5

	knowledge					
6.	Print media of newspaper is useful for timely knowledge related disaster	3.7	3	3.1	-	3.2
7.	Mobile companies should offer special discounts in earthquake affected areas	4	4.5	4.1	-	4.2
8.	In future, mobile technology should disseminate the information in disaster struck areas	4	3.5	4.1	4.1	3.9
9.	Timely news spreading through mobile technology can save human lives.	4	4	3.6	4.2	3.9
10.	Timely knowledge through mobile technology can help to mitigate the lose caused by disaster	4.4	4.5	4.7	4.3	4.4

3. Results

Table I is showing that the average mean scores are high against the various responses of the population. The use of other technologies in post disaster situations have comparatively less.

3.1. Discussions

The paper presents the study of the mobile technology"s use for the awareness purpose and educating masses. Other technological tools are also significant print and

electronic media, in order to spread pre and post disaster information. For instance how the disaster occurred and destruction on large scale, any society comes across. If the people were aware about the techniques of saving themselves.th e disaster could not bring large scaledestruction. Teachers and students were unaware from the techniques in disastrous situation. People can build back better with the coordination through mobiles. In remote areas this is the best technology to share knowledge and to give hope. We can enhance the capacity building through mobile, to combat this challenge if occurred next time.

4. Findings

The following findings of the study emerged as a result of the analysis of data:

- Mobile technology is useful in informing all of us about risks and ways to reduce our vulnerability as it can save human lives‟ loss as a result of disaster.
- Through mobile technology, which is suitable application in any disaster masses can be educated.
- Mobile technology awareness campaign can reduce the risk of disasters in developing countries during and post disaster situations.
- People can get back to normalcy and mobile will be helpful for early relief efforts. For timely coordination mobile phones are the best.
- In developing countries, use of mobile in emergency situation is economical, having fewer resources.
- Through mobile coordination after disaster, people can get back to early rehabilitation with hope.

5.Conclusions

In a nutshell, we may conclude that disasters are inevitable to human beings, whether they are natural, or manmade. So we should be ready to meet such challenge. We should be aware before, that how we will have to handle any kind of disaster. There are many examples of disasters in which people combat this challenge with the help of ICTs (Information and communication technology). Mobile is the easy and cheap tool available for help in such situation as well as for timely and early relief in affected areas. We should get benefit from the technology of the current era and we should train our generations to meet any future challenge. In such challenge we should all collaborate to mitigate our losses, optimally.

6.Recommendations

- In the light of the findings and conclusions drawn from the study, the following recommendations are made:
- Mobile technology should be used as a tool for early rehabilitation in post disaster situation
- Teachers and students should be trained the techniques about how to handle disastrous situation through mobile technology, as it is available in emergency situation too.
- Mobile technology awareness campaign can reduce the risk of disasters in developing countries during and post disaster situations.
- For early relief efforts technology of mobile should be in use with reasonable rates, as affected people are having loss of resources.
- For timely coordination use of mobile phones should be enhanced.

- Apps related to disaster, encompassing the alarm system should be developed.

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