Investigating disaster management importance in high schools curriculum: a case study of Amajuba District, South Africa

Ву

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Declaration

I, Goodwill Pasipamire, hereby present for consideration by the Disaster Risk Management

Training and Education Centre for Africa (DiMTEC), within the faculty of Natural and Agricultural

Science at the University of the Free State (UFS), my dissertation in partial fulfilment of the

requirements for the degree Master's in Disaster Management.

I sincerely declare that this dissertation is the product of my own efforts. No other person has

published a similar study from which I might have copied, and at no stage will this work be

published without my consent, as well as that of DiMTEC.

Signature

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Abstract

Having knowledge of disaster risk management is of paramount importance as it helps people in coping with hazards and even more so for learners to have a deeper understanding of the various fundamentals of disaster risk management. Thus, the main objective of the study was to assess the effectiveness of the inclusion of disaster management principles and practices in high school curricula. More emphasis was put on assessing the learners' behavioural and attitudinal changes after they had learnt about disaster management, and to what extent they applied the knowledge in their schools and communities.

The study centred on four high schools in Amajuba District, Masakhane ward with learners in the FET phase being the key respondents. The study was carried out using both qualitative and quantitative methodologies with the use of questionnaires, focus group discussions and individual interviews. The key findings of the study were that the schools were not doing enough to ensure that the principles and practices of disaster management were disseminated to the learners. This study found that although the government notice stipulates that schools should do emergency and fire drills, these activities were not being carried out in three of the four schools. Thus, the learners' behaviour and attitude strongly indicated that there were gaps within the system that required urgent attention to improve the learners' level of preparedness.

Dedication

To my wife, Sarah, and my parents, Mr Everisto and Mrs Lilian Pasipamire, for their love, support and understanding.

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List of Acronyms

AIDS Acquired Immune Deficiency Syndrome

DoE Department of Education

DM Disaster Management

DRR Disaster Risk Reduction

FET Further Education and Training

GET General Education and Training

GOLFRE Global Open Learning Forum on Risk Education

HIV Human Immunodeficiency Virus

KPA Key performance areas

KZN KwaZulu-Natal

LO Life orientation

NDMO National Disaster Management Office

PVA Participatory Vulnerability Assessment

PTSD Post Traumatic Stress Disorder

SA South Africa

SDSS Service Delivery Support Services

SEEDS Sustainable Environment and Ecological Development Society

SNDF Singapore National Defence Forces

UNDP United Nations Development Programme

USAID US Agency for International Development

CHAPTER ONE

Introduction and background

1.1. Introduction

Knowledge of disaster management principles and practices is fundamental for disaster risk reduction. The policy framework for disaster risk management in South Africa has four Key performance areas (KPA) and three enablers, which act as a guide towards conducting disaster management within the school environment. The KPAs are integrated institutional capacity for disaster risk management; disaster risk assessment; disaster risk reduction, as well as response and recovery. The enabler education, training, public awareness and research includes necessary elements of disaster risk management for both primary and secondary schools curricula. Schools are to be seen as central places for promoting a culture of safety. All disaster management centres in the metropolitan areas and districts are required to play an active part in engaging schools to ensure a practical approach to awareness programme (NMDC s.a:84).

The inclusion of disaster management in the curriculum, aims to empower the learners with such knowledge that they have the ability to understand risk and the capability to reduce the impact of a hazard. Despite the growing understanding and acceptance of the importance of disaster risk reduction and increased disaster response capacities, disasters and in particular the management and reduction of risk continue to pose a global challenge (UNISDR 2005:1). Hence, research was needed on how to communicate warnings of impending disasters effectively, and how to disseminate knowledge to help communities to improve their resilience (Mulugeta et al 2007:15).

An evaluation of the role being played by South African public schools' inclusion of disaster management in school curriculum and the contribution it is making to the learners' level of preparedness will be made. Educators' level of preparedness and the methods used in class to teach the disaster management principles and practices will have a greater positive influence on the lives of the learners. By analysing the ways in which the information was relayed to the learners as well as their behaviour within their communities, a reliable conclusion can be drawn. Within this chapter the reasons for the inclusion of Disaster Management within the curriculum were outlined as well as the objectives, research questions and the methodology used in the study.

1.2. Study area

Nearly one-third of the South African population is younger than 15 years. Of those younger than 15 years, approximately 23% (3, 52 million) live in KwaZulu-Natal (Statssa 2010:3). Amajuba District is located in the north-western corner of KwaZulu-Natal and comprises of three local

municipalities of Newcastle, Utrecht and Dannhauser (Amajuba District Municipality 2009:3). The Amajuba District Municipality Disaster Management Centre, through workshops with the local community members in addition to the practical disaster risk assessment, developed a hazard risk rating for the district shown in Figure 1.1.

Fire is the most prominent hazard that occurs in the district found within the Grassland Biome. The main causes of these fire hazards in this district include: ignorance such as people throwing away lighted cigarettes on the grass, using fire as a land clearing method, and when the fire gets out of control it usually results in veld fires. For instance, within the month of June 2011, there was a widespread fire that resulted in destruction in the area near Kilbarchan and Ngagane (Douglas 2011:6). In the year 2010, a fire destroyed the Hope of Christ Home in Newcastle resulting in thirteen children being killed (*The Telegraph* 2010). Some poor families within both the formal and informal settlements illegally connected electricity and faults were experienced resulting in fire hazards. Many people were unaware of the dangers that could arise from illegal connections.

The science curriculum covers electricity, but at the same time if learners were to be taught about the dangers associated with illegal connections they would convey the information to their family members and the community at large. Household fires were also as a result of improper use of flammable liquids such as paraffin which proved to be disastrous especially in areas like Section 3 in Madadeni where there were shacks built using highly flammable materials such as wood, cardboards and plastics. Sometimes children could be left on their own during the day resulting in them having to make use of the dangerous paraffin stoves to prepare their meals, which could make them vulnerable.

Furthermore poor communication between the communities and the fire department when fires start, usually results in slow response which leads to heavy losses (Amajuba District Municipality s.a:5). If learners were told about the importance of keeping all the emergency telephone numbers, reaction time could be lessened.

Hazardous materials such as mercury, petrol and sulphuric acid are usually transported between Johannesburg and Durban through Newcastle either by rail or by N11 road which is linked to the N3 making both the population and the environment vulnerable. There could be a risk of spillage and contamination or fire explosions happening in the event of an accident, which could cause injuries or deaths (Amajuba District Municipality 2005:17). Hence, it was important to educate learners about the possibility of such accidents, because at times children could be so inquisitive and might rush to witness an accident taking place, and this could make them vulnerable. A learner who had been taught of the dangers associated with hazardous material would not go anywhere near a spillage.

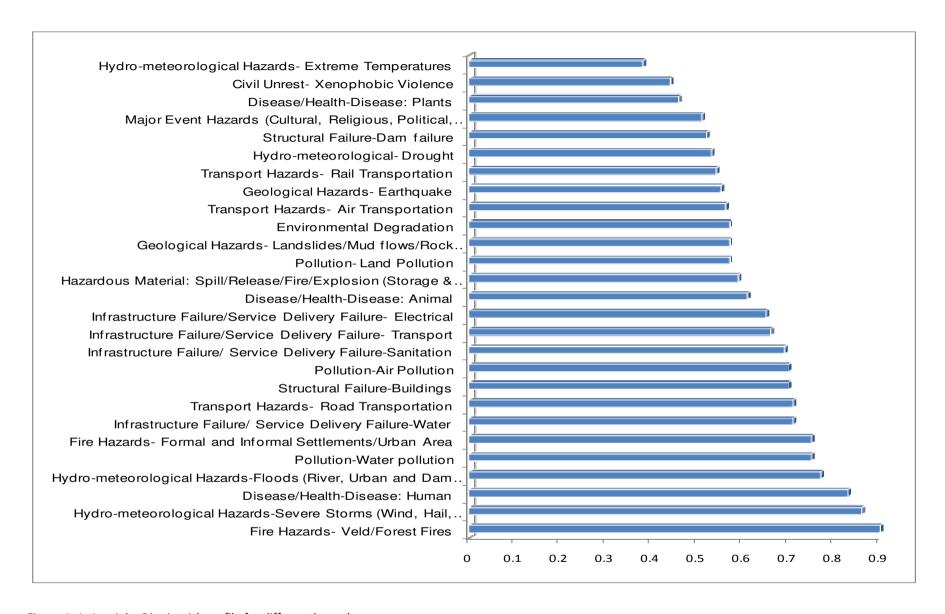


Figure 1. 1: Amajuba District risk profile for different hazards

Newcastle Local Municipality boasts a population of 364, 244 with a population density of 196 people per square kilometre (Amajuba District Municipality 2010). Poverty and high HIV prevalence manifest in Amajuba District where approximately 55% of the children survive in impoverished family units and 15% are living in child headed families. Food shortages, right to use of medication and education are some of their every day challenges (*Heard News* 2009). This meant that some of the learners within the schools were at risk due to lack of proper disaster preparedness guidance. The school curriculum could therefore be designed to provide the learners with knowledge that would enable them to deal with disasters. Most families were poor, taken as a whole, the family earnings in the district were low, only 11, 7% of the employed were paid more than R1600 each, monthly (Amajuba District Municipality 2011:35). Thus, the poor families settled informally in the Ngagane River floodplain as a way of avoiding paying rents, and consequently learners could be more vulnerable to both flooding and pollution.

Availability of clean water was another huge challenge in the district. This put a great number of learners at a disadvantage especially those who came from houses without access to clean water. The statistics reflected that only 50, 8% of the households had access to clean tap water within the house or in the yard. 18 155 households in Newcastle were below the RDP standards and these were usually the houses that had problems of access to clean water. Of the households, 31,4% made use of community taps, 11,4% used boreholes and springs, and the rest made use of other sources of water which were usually unclean such as the river (Amajuba District Municipality 2011:49).

Some of the high school learners were members of these families who lived in such appalling conditions. Furthermore the water and sanitation provision facilities at schools in Amajuba District were not equally distributed. Some schools were using the conservancy tanks for collecting waste water from the toilets and they faced problems when tanks were full because sometimes the tanks were not regularly drained. Moreover, in some schools there were no water connections subsequently making it unhygienic especially when the learners had to use the toilets. Thus making it crucial to educate the learners on concepts related with personal hygiene in order to minimise chances of cholera disasters in areas with poor water quality and poor sanitation.

The study concentrated on Further Education and Training (FET) Phase learners within high schools in Masakhane Ward which is found in the Newcastle area. There are a total of 28 schools in the Masakhane ward, which are mostly concentrated in Newcastle town and Madadeni high density area with a few being found in the surrounding farming communities as shown in the map on the next page (Figure 1.2).

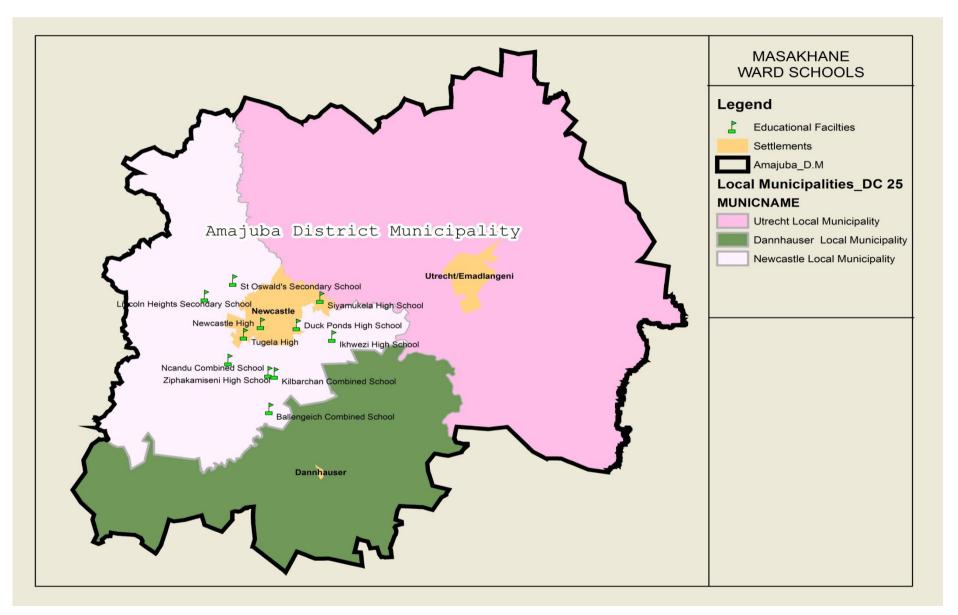


Figure 1. 2: Map showing the schools within the Masakhane Ward

1.3. Research problem

When there is a natural hazard, children are one of the most vulnerable groups, and especially those who are at school when the disaster strikes (CECC 2008:3). Children under the age of 15 account for nearly half of all victims of natural disasters (South Asia Disasters 2009:11). Physically, young people are often undergoing rapid physiological changes and can be especially susceptible to depression, post-traumatic stress, and a host of communicable diseases which spread in the aftermath of a disaster. Culturally, the youth of today are often the least prepared to deal with natural disasters because of the sense of invincibility that young people possess (Peace Corps 2001:48). Factors such as age affect children's vulnerability, and shape their ability to cope and survive in a disaster situation. Experiences of fear, violence, separation from parents and caregivers, exploitation and abuse are threats to the well-being and future full development potential of children (ADPC 2007:2).

School environments are also vulnerable to all forms of hazards. Biological hazards that could affect schools include infectious diseases such as pandemic influenza, XDR tuberculosis, methicillin-resistant *Staphylococcus aureus* or meningitis, infections, contaminated food problems including salmonella, botulism, and E. coli (U.S Department of Education 2008:14). The disasters themselves can disrupt learning for days, weeks, or months (Peace Corps 2001:44). Amajuba District, for example in which the Masakhane Ward is found was declared a disaster area on 21 January 2011 after the occurrence of floods (Government Gazette 2011). Flooding of the Ngagane River in Amajuba District resulted in 50 houses being filled up with water and five of the dwellings were spoiled (Hans 2011).

South Africa was not well geared up for the heavy summer rains which resulted in eight of the nine provinces experiencing flooding since mid December of 2010. To a large extent, the damage and death of human beings and animals could have been circumvented by having better preparedness programme in place (ReliefWeb 2011). Hence when learners have been taught flood safety measures, they will be aware of any evacuation routes and be prepared to move to a place of safety should the need arise (Worthington 2011). After the flood they would be able to cope and thus, in a way it would help to reduce the after effects of flooding such as physical and psychological trauma and physical injury (WMO 2007).

The South African public high schools are the ones which mainly cater for the children from the poor families as their fees are very low and some are no fee paying schools. Hence, the dissemination of disaster management education would be of paramount importance to these learners as they would be empowered to meet the challenges ahead.

There was very little information about the impact of disaster management inclusion in South African public high school curricula. Hence it cannot be safely stated that the desired results are being achieved especially within local communities, unless an analysis has been done.

1.4. Research objectives

- ❖ To assess the extent to which Disaster Management principles and practices are being implemented in public high school curricula.
- ❖ To assess the knowledge of learners in relation to Disaster Management issues in their curriculum.
- ❖ To assess the student's attitudes and behaviour after learning about disaster management.

1.5. Research questions

- What are the Disaster Management principles and practices that are being covered in the current high school curriculum?
- What disaster management concepts form part of the co-curricular activities?
- ❖ What knowledge of Disaster Management has been acquired by the learners?
- What are the learners' attitudes towards Disaster Management issues?

1.6. Rationale for doing the study

This study aimed to assess the capabilities of learners in applying the Disaster Management knowledge within their communities. This will provide an insight and will enhance an understanding of contemporary disaster-related issues thereby improving future action. The results are anticipated to assist the Department of Education in making recommendations to the curriculum developers either for the addition or removal of certain disaster management-related concepts within the curriculum. Educators will be able to take note of misconceptions if there are any and this will in turn lead to changes in the way the information is disseminated to meet the needs of specific learners. Learners will be able to have introspection which can lead to correction of any errors as well as misconceptions if there are any. This will make the learners better prepared resulting in them being less vulnerable to any disaster.

1.7. Research methodology

1.7.1. Data needed

Quantitative research and qualitative research were the techniques that were made use of to gather data with the intention of pursuing the objectives of the study (Charoenruk s.a:1). Qualitative research centre of attention was on implications, qualities and defining features of events, individuals, relations, surroundings, way of life and occurrences while the number or

numerical descriptions of things and their interaction were the focal point for quantitative methods (Tewksbury 2009:38). Use of qualitative and quantitative methods might tap diverse realms of knowing or promote or permit the expression of diverse aspect of information or understanding. Outcomes from the qualitative method could be explained by use of outcomes of the quantitative method and vice versa (Bryman 2006:105). Thus the two methods enhanced an appreciation of an occurrence or a subject matter through authentication of conclusions, expansion of an awareness or by instigating new traditions of viewing family preparedness as part of disaster management (Bazeley 2004:9). With the quantitative method, once the data from the questionnaire was incorporated into the Microsoft Excel spreadsheet application, several tables and charts were able to be produced (Hohmann 2006). Tabulated data and charts were used to analyse the results in order to reach the conclusion.

1.7.2. Data location points

- Local education department office (Masakhane Ward)
- ❖ Four selected high schools (30 learners per school)
- Two high schools from high density area and two high schools from low density area
- Local Disaster Management office
- Four life orientation educators
- Four principals

1.7.3. Sampling technique

A sample of the learners was chosen as it was going to be unfeasible and too costly to gather information from all the high school learners in the Masakhane Ward (Kelley et al 2003:263). Stratified random sampling technique was used whereby the high schools on the list, which was obtained from the Ward office, were divided into two groups. The first group included schools in the high density residential areas and the second group consisted of schools found in the town centre and in the low density residential areas.

The research was conducted by distributing questionnaires to 120 learners from four of the 11 high schools in the Masakhane Ward. Sixty of the selected learners were boys. From each school 30 learners were interviewed that is, ten learners per grade, from grade 10 to 12. Four high school principals and two life orientation teachers per school were also consulted.

1.7.4. Data collection methods

1.7.4.1. Literature study

A literature study was done to get a clear picture of what the department of education as well as schools had done to ensure the minimisation of learners' vulnerability to disasters. The curriculum

statements for life orientation and other learning areas such as geography and life sciences were closely analysed. This facilitated the identification of discrepancies and served as a framework to contextualize the practical research (Govender 2003:12). Educators' work schedules also helped in outlining the kind of activities which had been done within each school at different levels.

1.7.4.2. Questionnaire

A questionnaire was designed and administered to a sample of high school learners in Masakhane Ward, in order to assess their level of understanding on how to manage disasters. The questionnaires were able to measure both qualitative and quantitative data. The learners' questionnaires were self-administered and as result, the responses were obtained within a short space of time. Self-completed questionnaires were expensive to manage and a large sample of respondents of the high school learners were obtained (OAG 2007; William 2003:246).

The closed questions restricted the answers to a set making it feasible to administer, code, tabulate, and perform preliminary analysis in a short time (Gatech s.a). The designed questionnaires were the same in order to guarantee that the disparities of answers to questions could be construed as outlining the diversity amongst the respondents, rather than variations in the procedures that led to the formulation of the responses (Siniscalco & Auriat 2005:3). The questionnaires were presented to the learners and they were given a chance to fill in the answers in private and at a time that was convenient for them. This helped to increase the chances of getting a true reflection of their knowledge in relation to disaster management. The questionnaires were forwarded to 120 learners in four schools and this increased the confidence levels in the sample (Hofstee 2006:133). The constraint of the questionnaire was that the probable responses were restricted to those acknowledged by the researcher, no matter what form of consideration the individual questioned embraced and could put in plain words to the researcher (Tewksbury 2009:44). The questionnaires necessitated that the learners who responded were able to read and to understand such that they could give a true response (Trochim 2006).

1.7.4.3. Personal interview

Face to face interviews were held between the researcher and the Amajuba Local Municipality Disaster Management Centre personnel, to assess their contribution to the implementation of Disaster preparedness principles and practices within the high schools in Masakhane Ward (Knorr et al 2011). Personal interviews were also done with Masakhane Ward life orientation subject advisor, principals as well as the life orientation teachers to check on their impact in the implementation of Disaster Management principles and practices within the high school curriculum. The interviewer paid attention to how the interviewees comprehended or scrutinized the issue under discussion (Tewksbury 2009:43).

The conversational interviewing permitted the researcher to make certain adjustments to the questions, sometimes by paraphrasing them, such that the interviewees were able to comprehend the questions (Japec 2006). The advantage of the interview was that the characteristics of the respondents such as tone of voice, facial expression as well as hesitation were noted by the researcher. The interviewer was in control and assisted whenever there were problems (Brent 2010; Opdenakker 2006). Interviews presented a question skeleton; however, it had the advantage of permitting the interviewer to raise a follow up of the subject matter (Allsop 2006). The questions for the Amajuba disaster management centre officials were mainly centred on the role they were playing in ensuring that the schools were incorporating the disaster management principles and practices in their school programme. The principals and educators' questions were centred on their involvement within the school disaster management activities, their levels of preparedness in helping the learners to acquire the knowledge and skills to deal with disaster management issues. The medium of communication during the discussions was English and the answers were written down during the course of the interview.

1.7.4.4. Focus group interview

Focus group interviews were held at each school and each group comprised of six educators representing different subject areas offered within the school besides life orientation. The focus groups discussed issues and concerns about the inclusion of disaster management principles and practices in the high school curricula.

The group coordination was centralised, where the researcher chaired the discussion. The researcher posed questions to the educators who then discussed the answers that would have been given by one of them. The educators interacted and then gave their answers through the chairperson. The answers were being written down by the researcher during the group discussion as they were not comfortable with a voice recording being done. The discussions lasted, on average, 45 minutes.

The researcher asked the educators about their perceptions in relation to their preparedness to impart knowledge on disaster management principles and practices through class lessons and extra-curricular activities. Educators were also asked about their views on the availability of resources that would ensure protection to learners from any catastrophic event. One educator from school C stated that there was lack of equipment such as fire extinguishers making it impossible for them to teach the skill of fire suppression, and mentioned that in the event of a fire they would have to wait for help from outside.

1.8. Limitations of the study

- ❖ The Masakhane ward manager was not interviewed as he was not available due to other work-related commitments; instead the life orientation subject advisor was interviewed. The subject advisor could not answer some of the questions that were meant for the Ward manager. Hesitance to give away the intensity and aspects of information that were essential could have been due to reasons such as lack of understanding of disaster management within the school curriculum or uneasiness due to organisational secrecy policy. This affected the results, evaluation as well as the recommendations part of the research project (Dunton & Ryan 2009:2).
- ❖ Some interviewees, for example an official from the disaster management centre and two of the principals continued to postpone the dates for the interviews because of work obligations and lack of time, and it caused the researcher loss of both time and money.
- ❖ Some learners failed to provide honest answers because there were variations in certain questions, for example questions that asked about whether they had done class disaster preparedness plans, and it was found that learners in the same school gave different answers. Some would say yes and some would say no while the interviewed educator would have indicated that there were no such plans within their school.

1.9. Ethical considerations

- ❖ The researcher established a connection with individuals being interviewed or responding to the questionnaire, and was not intimidating the respondents (Tewksbury 2009:47).
- Security and safeguarding of an individual's privileges by using the route of informed consent for the participants (Charoenruk s.a:9).
- The confidentiality and anonymity of participants were maintained.
- ❖ What participants said would not be traced back to them when the final report was produced.
- ❖ Information supplied in confidence by the participating learners, educators as well as principals, was not disclosed directly to third parties (Dawson 2006).
- ❖ Permission to carry out the research was sought from all the relevant authorities, namely the ward manager, principals as well as the School Governing Board for the selected schools.
- ❖ The participants were informed about the intended use of the results as well as where the copies of the thesis would be displayed.

1.10. Conclusion

Disasters have a tremendous impact on children. In this chapter, the significance of disseminating disaster management knowledge to high school learners was clearly outlined. Generally the research is going to focus on assessing the effectiveness of the disaster management concept

inclusion in the curriculum of high school learners in Masakhane Ward. This might act as a microcosm of the experiences currently being encountered by the rest of adolescents in South Africa. Results found might then act as a framework for decision-making purposes by various stakeholders working towards managing the diverse disasters that are affecting people today.

CHAPTER TWO

Disaster Management Framework

2.1. Introduction

Forthcoming disasters are unavoidable because we are not always certain of when they will take place. Concern about the subject of disasters is turning out to be increasingly significant as increases in the number of people residing within a community, populace migration and increasing technology increase the chances that communities will encounter disasters more regularly and with more negative consequences (Gupta & Mahajan s.a:427). It is of paramount importance to implement disaster management at all levels of society. Disaster management is defined in the South African Disaster Management Act No 52 of 2002 as a continuous and integrated multisectoral, multi-disciplinary process of planning and implementation of measures aimed at: preventing or reducing the risk of disaster; mitigating the severity or consequences of disasters; emergency preparedness; a rapid and effective response to disasters; and post-disaster recovery and rehabilitation (Government Gazette 2003:6). Hence disaster management is a systematic process that is based on the key management principles of planning, organising and leading which includes coordinating and controlling (VUSSC s.a:19).

A high school curriculum that includes the disaster management principles and practices would result in learners being on the lookout for any signs of an impending disaster, and learning to take appropriate action to save lives, items of sentimental value, and sites of archaeological and cultural interests. A culture of safety would be cultivated both at school and within the communities where these learners reside. Several models for disaster management have been proposed, namely, the traditional model, expand and contract model, Kimberly's model, Tuscaloosa model, circular model, Manitoba integrated model, Weichselgartner model, Crunch model as well as the Release model (Asghar et al 2006:1). The discussion would be based on the Traditional Model, which paves the way for a better understanding of a typical Disaster Management continuum. This comprises of six elements where the pre-disaster phase includes prevention, mitigation and preparedness, while the post-disaster phase includes response, rehabilitation, reconstruction and recovery (NIC s.a:7).

2.2. Traditional process of disaster management

A disaster is a severe interruption of the day to day life of people within a community and it causes serious losses such as human life, flora and fauna, trade and industry activities resulting in a society's failure to deal with the situation as the resources would have dwindled (Baas et al 2008:5; Hayati et al 2005:14; OCHA s.a). This can be countered by the implementation of the Traditional Disaster management model, Figure 2.1, which consists of two phases, namely pre-disaster risk

reduction and post-disaster recovery phase. Prevention, mitigation, and preparedness are examples of tasks done during the period prior to the disaster occurrence. Response, recovery as well as rehabilitation are examples of activities carried out after the disaster has been experienced within a community (Asghar et al 2006:2).

Management of Disasters is done in phases in an orderly approach. The focal point is just prior to, and after the beginning of the catastrophic episode (ADPC s.a:4).

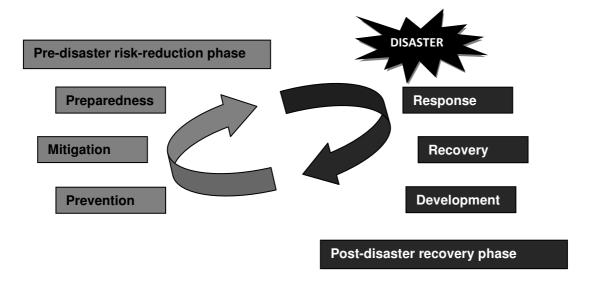


Figure 2. 1: Traditional Model outlining the progression of the disaster management process

(Source Albetoush et al 2 011:55)

2.3. Disaster management process

2.3.1. Risk reduction stages prior to a disaster occurrence

Disaster risk reduction refers to the conceptual framework of elements considered with the possibilities to minimize vulnerabilities and disaster risks throughout a society, to avoid (prevent) or to limit (mitigation and preparedness) the adverse impacts of hazards within the broad context of sustainable development (Baas et al 2008:4; ISDR 2002:25). According to DFID (2004:1) good disaster risk reduction also continues after a disaster, building resilience to future hazards.

Risk reduction measures are the various activities, projects and programmes that the communities may identify after assessing and analysing the risks that they face. These measures are intended specifically to reduce the current and prevent future risks in the community (Abarquez & Murshed 2004:6). Enhancing management and problem solving skills, knowledge, expertise and access to resources within communities, and particularly in community groups, can benefit both communities and individuals. Additional skills and resources can develop and supplement community capacity

to manage affairs at the community level and to provide mutual support to individual members (Buckle et al 2001:41) Hence risk reduction measures are most successful when they involve the direct participation of the people most likely to be exposed to hazards, in the planning, decision-making, and operational activities at all levels of responsibility (ISDR 2002:141).

2.3.1.1. Preparedness

A disaster is a phenomenon that results from the amalgamation of a hazard, pre-existing conditions of vulnerability and poor measures used to diminish the effects of the hazard (Baas et al 2008:5) (OCHA s.a). Conditions of vulnerability and poor measures being implemented within the Amajuba District communities can then be improved by disaster preparedness. Disaster preparedness involves immediate short-term risk reduction measures designed to reduce the effects of disaster just before, during and after it has occurred (Hansford et al 2007:4). Preparedness helps as a sequential connector linking the pre-impact and post impact segments of a disaster occurrence (Sutton & Tierney 2006:3).

Disaster preparedness constitutes the actions taken by people and institutions with the aim to minimise the adverse effects of a hazard through effective precautionary actions and to ensure timely, appropriate and efficient organisation and delivery of emergency response following the impact of a disaster (SARCS 2009; VUSSC s.a:43). When the local and international nongovernmental organisations, civil service as well as the local populace's practical and administrative competencies are reinforced, then acceptable level of readiness to take action to any urgent state of affairs will be realized (VUSSC s.a:41). Hence, when the disaster such as floods occur where levels of preparedness are high, fewer people would drown or be injured as people would be quickly moved to higher grounds, essential services such as education and health will not be interrupted as the built environment will have been strategically located away from the floodplain (Arya et al s.a:7). High school learners will be taught what to do in the event of a flood affecting their families or the community where they stay.

Disaster preparedness includes various activities such as; training programmes for response personnel, exercises and drills for emergency plans, education programmes to inform citizens, disaster management training programme for high school educators, preparation of the school disaster management plans, hazard detection and warning systems; identification of evacuation routes and shelters; maintenance of emergency supplies and communication systems; establishment of procedures for notifying and mobilizing key personnel; and individual household measures such as clearing some spaces in a house to make room for belongings in case of a flood (Dey & Singh 2006:7; Marianti 2007:15).

Preparedness also entails the temporary removal of people and property from a threatened location (ISDR 2002). A community should have its own preparedness plans; shared aid accords,

as well as the telephone numbers and office addresses for all the human resources involved in emergency situations such as the police, fire fighters, ambulance services as well as the local disaster management team. In instances of countrywide or local adversities, essential human basic necessities such as water, groceries, fuel and medication as well as some equipment such as fire fighting tools, would have to be purposefully set aside (VUSSC s.a:41). Preparedness entails the establishment of an early warning system where the hazard recognition and mapping would be undertaken; the imminent events would be determined and closely examined resulting in the giving out of comprehensible warnings to the community members who will then undertake fitting and well-timed activities while reacting to the warning (ISDR 2004:3).

The advancement and testing of the early warning structures at planned periods in addition to an arrangement on procedures to be engaged for the duration of adversity alert would increase the levels of community readiness resulting in reduced chances of people dying as well as less destruction of the built environment. All the personnel to be involved in emergency situations and the members of the communities in danger would be skilled and well-informed on ways to act in response to specific hazards. Disaster response guiding principles, values, administrative schedule and functioning strategy set-up will have to be pursued by all the stakeholders who will respond after an adversity (VUSSC s.a:43).

There is a relationship between disaster mitigation and preparedness, for instance disaster preparedness involves the application of mitigation measures such that the current infrastructure can resist the impact of a disaster and that people would be able to cope and be secure. Cumulative preparedness includes the efforts of people and the government to manage acute hazards when they take place (VUSSC s.a:43).

2.3.1.2. Mitigation

Mitigation instruments are techniques, guiding principle and actions that either lessen the negative effects of a disaster, lessen the period to re-establish essential services or reduce the likelihood of the disaster taking place (Pollock 2011). For that reason, mitigating actions would have to be specifically designed for either the hazard or the aspect susceptible to the danger (Dey & Singh 2006:7).

Mitigation planning should aim to develop a disaster "safety culture" in which the people are fully aware of the hazards they face, protect themselves as fully as they can and fully support efforts made on their behalf to protect them (Coburn et al 1994:36). An important element to take into account when executing a mitigation approach would be to a have a clear appreciation of the characteristics of the threat under consideration as hazards experienced vary from one place to another. For instance, a number of nations such as Mozambique, South Africa and Bangladesh are at risk of floods and Zimbabwe is at risk of drought while others have been impacted by tropical

storms; and others such as Haiti are at threat from earthquakes. The consequences the hazards are expected to have, as well as their probable harm is reliant upon the hazard, the populace, their source of income and the available functioning facilities. Within any given community it would be of utmost importance to have knowledge of the hazards that have the greatest chance of being a threat (VUSSC s.a:30).

Structural and non-structural measures are undertaken to limit the adverse impact of natural hazards, environmental degradation and technological hazards (ISDR 2002:25). In drought-prone regions the available water supply would have to be conserved, while in the case of flood as a hazard, families would have to be moved away from the floodplains to secure places in case of a flood. Minimising the economic as well as societal exposures to impending disasters is also part of mitigation (Dey & Singh 2006:7). A range of seeds that can withstand the effects of extreme conditions such as more wind, flood or drought can regularly be planted in areas experiencing these extremities (VUSSC s.a:30). Homes can be destroyed by high winds. Various measures can be considered in areas that are affected by strong winds, for instance constructing structures that resist strong winds, and planting trees to act as wind breaks and building community halls that bear up against strong winds in vulnerable communities (VUSSC s.a:33).

Having a family or school disaster plan can be a primary measure towards mitigating the consequences of a disaster when it strikes a particular family or school (Hermann 2007:13). Education should attempt to familiarize and de-sensationalize the public. Information about hazards should be part of the standard curriculum of children at school and be part of everyday information sources, with occasional mention of them in stories, TV soap operas, newspapers and other common media. The objective will be to develop an everyday acknowledgement of hazard safety where people take conscious, automatic precautions by being aware of, but not terrified of, the possibility of hazard occurrences (Coburn et al 1994:36).

2.3.1.3. Prevention

Prevention in relation to a disaster means measures aimed at stopping a disaster from occurring or preventing an occurrence from becoming a disaster (Government Gazette 2003:8; UNDP 2010:4). Principally prevention entails having enhanced appreciation of how disasters take place (Voogd 2004:11). Disaster prevention consists of the preserves that are instituted to impede the effects of a catastrophic event such as flooding or a science laboratory fire, policies along with legislations with the purpose of having an effect on community development and are not detrimental to human along with the flora and fauna well-being form part of the prevention principles. It is usually difficult to prevent a natural disaster entirely (Miththapal 2008:2). For instance, if learners' families are residing within insecure flood plains, houses that are non-earthquake proof or adjacent to the fireworks factories, they are generating the indispensable circumstances for an impending disaster

(Voogd 2004:4). Municipalities and government departments can construct a dam or levee to control flood waters; control burning-off programmes in a veld fire area, and ensuring that there is proper socio-economic development and active ownership and participation of communities in all phases of the disaster management continuum according to the Green Paper (s.a:21).

2.3.2. Post-disaster phases

The socio-economic, political and cultural systems within an area could be affected and deteriorate depending on the intensity and severity of a disaster (Shankar 2011). The objective of post disaster management would be to minimize the effects of a disaster and rebuild the systems to their previous conditions before the disaster occurrence through response, recovery and development phases. The response would be undertaken immediately after the disaster occurrence and this would be followed by recovery then lastly development, which could take a longer duration.

2.3.2.1. Response

The response phase entails the real execution of the disaster plan (Herrmann 2007:13). The aim of disaster response would be to guarantee the continued existence of the most probable number of affected individuals, while ensuring that their well-being is not placed in jeopardy due to the existing state of affairs. Learners would have to be empowered to ensure increased levels of competence, at the same time indispensable services for all members of the society should be restored at the earliest convenience while taking into cognisance of the needs of the most vulnerable and underprivileged groups. The damaged infrastructure would then be repaired or replaced whilst the viable economic activities would be regenerated in a manner that contributes to long-term development goals, reducing vulnerability to any future recurrence of potentially damaging hazards (VUSSC s.a:52).

There can be early stages of response as well as the late stages of response. Early reactions entail rescue as well as relief; while later responses involve rehabilitation along with reconstruction. The primary responders to any catastrophe are the members of the affected society themselves not municipal personnel (Donohue et al s.a:457; Rahman s.a:415). How societies react to disaster might as well bring about more traumas to persons and put them in danger of developing an assortment of undesirable reactions as well as psychological effects. Thus, learners would need to be geared up for any eventuality no matter the size (Herrman 2007:11). Prompt and effective response minimises loss of life and property. The existing and the new institutional arrangements need to ensure an integrated, synergised and proactive approach in dealing with any disaster. This is possible through contemporary deployment of the specialised response force (NIC s.a:34).

Although each disaster creates unique circumstances where the response needs to be tailored to meet the specifics of the situations, there are components which usually form part of the response,

namely search and rescue, assessment of needs, emotional support as well as assisting people earn a living to speed their recovery (Global Education 2010). An urgent safe haven, health assistance, and group nourishment are actions intended to present immediate aid for affected families. All the water supply sources that had been polluted with, for example sewage waste, oil spillage or other harmful contaminants would be closed. Areas most at risk of raiding such as the food as well as medicinal distribution points would be carefully protected. All this would be undertaken so as to bring stability within the area, while paving the way for the extent of destruction of the area to be evaluated, which will lead to quick recovery processes (Johnson 2000:2).

Disaster response refers to the activities done by citizens along with organization in order to deal with the disaster. People will be notified of the impending disaster or a hazard that has already hit the area without notice. Thus, community members may have to be promptly evacuated. When people are evacuated the objective will be to find sound solutions in addition to making sure that shelter and support is given to the victims (VUSSC s.a:52). Learners with appropriate disaster management knowledge will be able to lead their families as well as community members during the evacuation in addition to the search and rescue phase. School buildings are usually safe places to accommodate people who have been evacuated from their homes. If the school has boarding facilities, learners will have to be evacuated to a safe place or their parents notified so that they can take appropriate action to ensure the safety of their children. Thus, the school disaster management committee must, within its plans, prepare for such unexpected events.

A society's reaction to a tragedy lays the foundation for both short-term as well as long-term revival. If the society fails to take action effectively to a disaster, its standing suffers. This loss of credibility can turn out to be an obstacle to execution of a holistic disaster recovery (Colorado s.a:3).

2.3.2.2. Recovery

Community amenities such as the public halls, public library, museum, crèches as well as schools can be damaged due to flooding. The valuable contents of these facilities such as textbooks, paintings could also be destroyed and this would negatively affect the Amajuba District high school learners who usually rely on these facilities for their day to day activities (Gayelord 2008). Therefore quick response by the Amajuba District Municipality Disaster Management Centre as well as the community inclusive of the children would help.

Recovery is the process whereby people and the built environment are returned to minimal functioning standards and pave the way for lasting measures to be implemented, which are meant to eventually restore life to a typical state. This includes building temporary housing and provision of basic household amenities (Kafle & Murshed 2006:13; Miththapal 2008:2). According to Wisner

et al (2004:50) recovery means the psychological and physical recovery of the victims, and the replacement of physical resources and the social relations required to use them. In the event of disaster occurrence either within the school or the surrounding communities the high school pupils as well as their educators could be affected. Post Traumatic Stress Disorder (PTSD) could be the result where learners experienced irritability and anger, lack of concentration and excessive vigilance (Ahern et al 2005:39). Normal teaching and learning would need to be restored as soon as possible so that learners would not be at a loss. The trained counsellors and educators should help monitor the behaviour of the learners to ensure that the chances of depression and post traumatic stress being experienced would be minimised. Educators as well as other learners would provide social support to decrease the levels of stress experienced by affected learners (Tapsell 2000:320).

As the disaster is managed, the victims are able to move on with their lives and start reconstructing their infrastructures such as houses, as well as other communally owned facilities, namely bridges, roads and schools. Recovery actions are maintained till all community functional structures normalise. Communal information dissemination, well-being and protection scholarship, reconstruction, counselling programmes, along with an analysis of the trade and industry effects would be part of the recovery process. (VUSSCs.a:57). Cleaning of the destroyed surroundings, short-term accommodation as well as making sure that all the affected individuals have the right to groceries and water, are short period recovery actions aimed at ensuring that the fundamental lifemaintaining structures are returned to minimum functional norms (Johnson 2000:3). Recovery could be positive in that better infrastructure would be built to replace the ones destroyed.

2.3.2.3. Development

Development is a dynamic process and a disaster offers the opportunity to vitalize and revitalize this process, especially in the generation of local economies and the upgrading of livelihoods and living conditions (ADRC 2005:38). Community members have the power to ensure that renovations are done as well as sustained improvements of existing infrastructures (Donohue et al s.a:457). Learners can take an active leading role within their communities by providing ideas on how to develop the community within the parameters of disaster management practices.

The cause and impact of the last disaster event and the possible changes in risk are analysed by the community resulting in the necessary precautionary measures in prevention and preparedness being defined (Garatwa & Bollin 2002:16). The lengthy period of reaction to an adversity would occur when renovations are being done. For the duration of development, durable facilities are reinstated within the communities, ecological units are re-established and sources of income for the families are revived (GDRC 2008; Miththapal 2008:2). Paddavlei, Groenvlei, Boschoffsvlei, Blood River Vlei are the wetlands found in Amajuba District, which when destroyed as a result of a

disaster would need to be rehabilitated to its natural state (Amajuba District Municipality 2011:465). Learners can use their environment management knowledge during the rehabilitation stages as well as for the maintenance of the wetlands. School buildings can be damaged as a result of the disaster or after the disaster when they would have been used as shelter for the disaster victims whose houses would have been destroyed. In such a scenario, necessary steps would be taken to ensure that the structural facilities are returned to their previous state or better than before in line with mitigation measures to make them safe for use by learners. Development can be equated to mitigation or preparedness, since people would be taking precautionary measures to make sure that the built environment and socio-economic structures would not be susceptible to the effects of hazards.

2.4. Strengths and limitations of the traditional model

The traditional disaster management model clearly illustrates all the necessary elements that need to be taken into account when the schools are to include the disaster management principles and practices within the curriculum.

The traditional model has some limitations in that it portrays the disaster management as a definite cycle which might pose a challenge because some of the activities done in the response and recovery phases can be done concurrently (Asghar et al 2006:2). Economic stability is a crucial element for the execution of both the pre-disaster and post disaster phases. Where the economy is weak, some of the measures would not be properly implemented resulting in the impact of the disaster being high.

The traditional model does not give a clear outline on the aspect of hazard analysis. Hazard analysis facilitates the assessment of the risk facing communities by identifying what is most likely to occur within a given time frame (Concern 2005:7). In the end the hazard analysis shows the extent to which the inhabitants, flora and fauna, infrastructure and commodities would be threatened (Kohler et al 2004:25). This would pave way for the planning component of the preparedness stage, which is part of pre-disaster risk reduction.

2.5. Conclusion

Whenever an area is affected by a hazard and there are people who are vulnerable, the end result will be a disaster. Therefore to avoid the occurrence of the disaster or to minimise the chances of the community experiencing any negative consequences of a disaster, disaster management should be undertaken. For effective disaster risk management within the school, family or at community level, disaster management principles and practices would be followed and for this research, the guide would be taken from the traditional disaster management model. The focus

would be on disaster management implementation within the school set-up with the intention of causing a positive change within the lives of the children, their families as well as the community at large.

CHAPTER THREE

International Outlook on Progression of Disaster Management

3.1. Introduction

When a disaster strikes at a particular place, it has widespread effects and almost everyone is affected. However, there are groups of people that are more vulnerable than others, of which amongst these are children. Age is one of the factors that affect a person's capability, thus children are unable to cope and adopt measures of sustaining themselves during disastrous situations. Therefore it is now becoming relevant for children to be involved in disaster risk reduction (ADPC 2007a:2).

Education is prioritised by all governments around the world and in their budgets they set aside considerable amounts of money for it. Education is an important factor in laying a foundation for a better tomorrow for everyone. Disasters are complex in nature and need to be addressed in a learning setting. It is necessary to accept that disasters can affect anyone despite place, age or time in order to reduce the debilitating circumstances of losing lives. Education is a paramount fundamental human right and its major objective is to provide people with skills and principles to better their lifestyles. Children are sent to school such that they become enlightened and be good leaders of the future generation. Schools and educators through their elemental duty of giving direction to the children for them to become responsible individuals, offer the best opportunity for students to learn about natural hazards at a tender age. In this way the students become aware of their surroundings and can be taught about measures to take in order to limit their vulnerabilities to disasters (Reyes et al 2011:2).

Governments can save communities from harm by putting schools in the forefront of initiatives to accomplish immense resilience to disasters because schools can bring together scientific knowledge and the practical measures of the community by sending messages, setting values and be used as a location of protecting the people from disasters (Campbell &Yates 2006:4). The education system has various factors such as the functional, pedagogical and structural that play an important function in order to limit risks of disasters (ADPC 2007b:1).

In addition, teaching Disaster Risk Reduction (DRR) to children at an early age is more advantageous because they are able to adapt as they grow older, and are even able to pass on the information to a coming generation rather than teaching older people who have to understand the skills themselves before they can pass them on to the coming generation. It is thus extremely important in terms of the economy to enhance and expand child oriented and child-led DRR (Back et al 2009:10). This chapter will discuss the consequences of disasters on the education system as well as benefits to be derived by the school and the surrounding communities when DRR is

integrated into the curriculum. The various ways by which some countries have incorporated disaster management into the school system would be closely looked at with emphasis being placed on the changes in learners' knowledge, attitude and behaviour that would be expected afterwards. An outline of what has already been achieved will be crucial as a foundation on which the current scenario within Masakhane Ward can be critically evaluated.

3.2. Disasters impacts on the education department

According to the Cambodian Ministry of Education Youth and Sport's initial assessment, floods in 2000 damaged at least 1, 0000 schools which were 18% of the total schools in the country then (ADPC 2008a). Damage to the water and sewage systems of the schools might have an immensely negative effect on the learner's well-being. During periods of severe flooding, the unexpected disruption of these services overlaps with the direct consequence on the spread of water-borne or vector-borne diseases (DCP2 2007:3). Sichuan province of China was hit by a very big earthquake in 2008 where 12 000 schools were destroyed leading to the death or injury of thousands of learners (Harutyunyan 2009; WHO 2009). As a result of the disaster, learners would experience psychological reactions varying from short-lived mild stress reactions to the more severe and long-lasting consequences of post-traumatic stress disorder (Hagan 2005:791).

The western region of Kenya is usually affected by floods. As a result most qualified educators might be hesitant to go and teach there. Consequently, there could be a recurrent shortage of qualified educators (Achoka & Maiyo 2008:158). School calendars will also continue to be disrupted and children's learning would be interrupted due to lack of proper planning to deal with frequent hazards, so school communities should take responsibility now for emergency planning. This can be achieved and it will show that people can sustain themselves through the power of education (Petal 2008:5).

The interruption of study programmes affects the excellence in terms of teaching and learning processes. Learners might be forced to miss school by their parents who would be requiring their help in doing activities to try and restore life to normalcy, such as the cleaning and repairing of houses. Learners as a result might end up dropping out of school. Families could be relocated to temporary shelter thereby limiting accessibility of the schools (Peace Corps 2001:40). Learners could be transferred to a nearby school. Time and again schools are used as assembly points for a community's cultural proceedings, libraries, as well as community centres used for DRR meeting where decisions affecting the whole community would be passed (Gonzalez & Trejo 2008). Hence, the destruction of a school would negatively impact the social services offered by the department. While at the same time, the destruction of family homes would result in the interruption of school days as the buildings would be used as short-term refuge. Figure 3.1 below gives a clear outline of

negative socio-economic consequences that can be faced by the Education Department in the event of a disaster.

Figure 3.1 on the next page clearly shows that it is crucial to make use of the recognized education structures to coach calculatingly to enable the learners to attain information with respect to potential adversities, advance their mental problem resolution abilities, and develop a positive approach of guardianship for the immediate surroundings. This will result in learners being dedicated to take part in a well-organized way in programmes meant for the environmental enhancement and as safeguard. Hence schools are there to lay the basis required in developing an appreciation of the theories in addition to facts that will cultivate long-term benefits in generating societies with members who will have survival tactics that make them less susceptible to impending catastrophes (CDERA 2000:i). The most beneficial and cost minimization as well as tangible measure administrators of different municipalities or provinces can advocate, would be teaching in the classroom about hazards that have an effect on the local environment. There can be few other communal institutions which can disseminate information with the capacity to teach all the families within a community than the school (Campbell & Yates 2006:6).

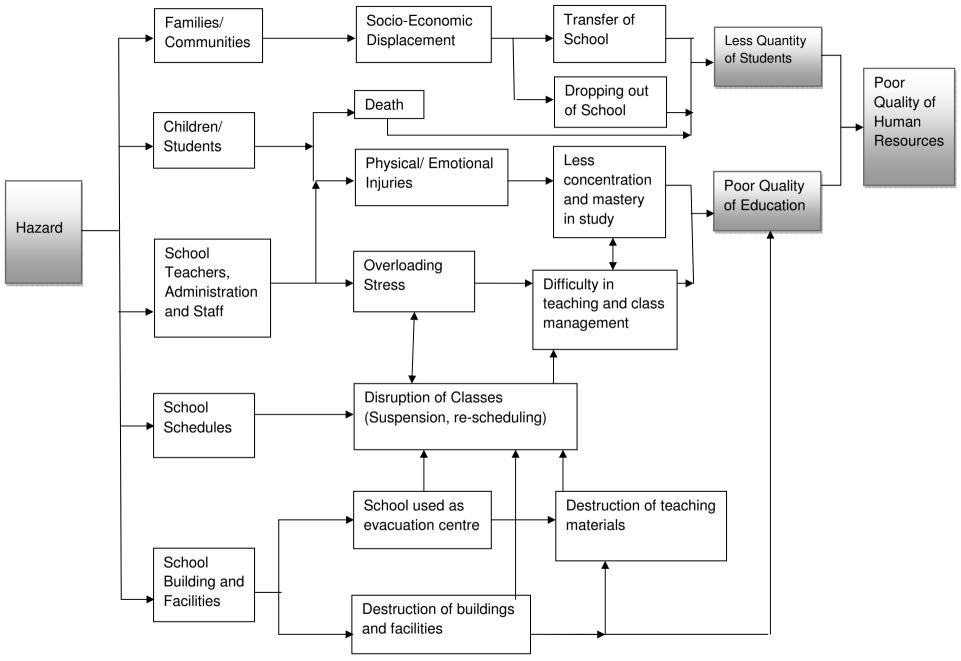


Figure 3. 1: The Negative Socio-Economic consequences of Disasters on Education Department (Source: ADPC 2008b:59)

3.3. DRR leading to safety in the community

The impacts of disasters such as loss of life, injuries, property loss, loss of revenue, can be avoided by adopting preventative methods before the hazard takes place and being aware of preparedness and knowing how to respond to different natures of hazards (IFC s.a:1). When everyone in the community is conscious of the hazards that usually take place in their area, and participate in limiting the effects and when there is a change in behaviour and attitudes at all levels then it can be said there is a culture of safety within that community (Campbell & Yates 2006:10). Children's active involvement in disaster response, preparedness and management is usually limited due to their age. However, support from the parents, school administrators, school educators and the Department of Education will strengthen them and they can survive risky situations (ADPC 2007a:1).

3.3.1. Curriculum influence on safety at school

Safety in schools involves matters such as the child's right to education including DRR strategies, governance, distribution of resources, disaster awareness and family integration within the structure of both inside and outside school environment in order to limit any potential risks to children (ADPC 2010:3). The whole school community must be involved in ensuring safety in the school so this attempt entails good management and unity of the administration and members of the school community including the parents' representatives (IFC2 s.a). For instance, water borne disease such as cholera can become a momentous menace after heavy rains, flooding and earthquakes. Stagnant pools of water can also avail breeding grounds for mosquitoes resulting in learners being infected with malaria (Back et al. 2009:19).

Therefore educating the children about disasters and their nature and consequences; especially teaching them about the kinds of natural hazards that affect their area and the obtainable means to prepare and manage the possible effects of hazards will strengthen their capability in coping with risky situations (Reyes et al 2011:3). In Nepal, knowledge about DRR, led to an increase in the number of learners making use of the toilet, while the number of those defecating in the open, decline resulted (Gautam 2010:80). This would help reduce the chances of learners being affected by communicable diseases such as cholera that are a result of unhygienic practices.

Although generally it is a fact that safety in school is associated with teaching children safety at the initial phase. There are also other elements involved such as observing safety precautions, developing firm regulations and proper use of facilities in the school. This would help in making sure that there is physical and structural safety in the school (Reyes et al 2011:3). It is of paramount importance to build a secure learning environment for children around the world because that would mean good results would be achieved, in other words the physical environment has an effect on the implementation of the curriculum. Governments should be

tireless when it comes to education accessibility, and enhancing the standards of educational services (Gajbhiye 2011:81).

3.3.2. School curriculum influence on surrounding communities

Students and educators are central in maintaining a culture of safety (IFC s.a:1). Many countries around the world have shown that education is one of the great ways of ensuring that communities are aware and are prepared for disasters. The formal school curriculum has, to a greater extent, adopted different fundamentals such as safety precautions, health and even hazards (Izadkhah & Hossein 2005: 140). Children are said to be more open, eager to learn new skills and welcoming to new information than adults. That is why many present disaster mitigation awareness and preparedness programmes have the initiative to implement disaster associated issues into the school curriculum (Izadkah & Hossein 2005:141). Children can take the knowledge they acquire from schools to their homes and their communities at large (Campbell & Yates 2006:10).

In Nepal, learning about DRR has given children louder voices. Children have started to come up with their own ideas about improving communities and to generate resources by setting their ideas into action. Now schools have helped build a culture of safety during disasters, children and their parents have started to carry out collective action for DRR at home and in the community (Gautam 2010:80). As learners mature they can begin to be involved in serious disaster mitigation areas such as being architects and constructing buildings that are disaster resilient. Some can be inspired and bring a whole range of different ideas that can save their communities (International Finance Cooperation IFC 1s.a:1).

3.3.3. Learners leading management of disasters in the future

Child-directed DRR entails actively involving the learners in the planning and delivery of the various activities (Back et al 2009:7). The idea behind child led efforts is the belief that children can play an active role in community affairs relevant to them, including disaster prevention, especially if they are appropriately trained and supported by adults. Rather than being seen as victims, children who learn disaster risk reduction can help adults to protect community members (Petal 2008:40). In Thailand Youth trainers got in touch with hundreds of learners in many schools to speed up the dissemination of DRR information. Children visited the communities, where they performed risk and resource mapping, and came up with a disaster risk reduction education campaign (Petal 2008:40). Learners, if well supported, also have the capacity to connect with the media organisations as well as the local municipality managers persuading them to make resolutions having a positive impact on the local environment as well as minimising the risk encountered by the communities (Back et al 2009:10). Learners' education as well as family responsibilities should

be taken into account in a child led DRR thus making it important for this to be part of the high school curriculum as they spend most of their learning time undertaking activities within the designed curriculum.

3.3.4. Educators' influence on safer community

Educators who are enlightened, aware of disaster mitigation policies and are passionate about disseminating the information to children both in class and during extra curricula activities can have a great influence on the general view of children about the continuing need to implement a tradition of disaster resilience (Reyes et al 2011:3). Educators are usually given esteemed positions by the community and their perceptions are valued in issues that concern the public. As a result the extent to which educators address the significance of safer school buildings can be very influential in building disaster resilient communities (CRID s.a:24).

3.4. Global conventions on Disaster Risk Reduction within schools

At international level there are organs that have been advocating for countries to ensure actively that different stakeholders, inclusive of the education department, are involved in disaster management. The theme of the United nations 2000 World Disaster Reduction Campaign was Disaster Reduction, Education and Youth aimed at the continuation and development of a culture of prevention through education, so that young people could take a pro-active role in understanding risks and reducing the impact of disasters (Izadkhah & Hosseini 2005:141). A total of 168 governments promised to limit the effects of disasters on their people at the World Conference on Disaster that took place in Kobe in 2005.

The Hyogo Framework for Action 2005-2015 is a chief article from the meetings. What is central to this framework is the utilization of information and education structures to create a tradition of safety and resilience across all stages (Campbell & Yeats2006:3). The Hyogo Framework for Action 2005, priority three entails the use of knowledge, innovation and education to build a culture of safety and resilience at all levels. Disasters can be substantially reduced if people are well informed and motivated towards a culture of disaster prevention and resilience, which in turn requires the collection, compilation and dissemination of relevant knowledge and information on hazards, vulnerabilities and capacities.

One of the key activities is education and training, which promotes the inclusion of disaster risk reduction knowledge in relevant sections of school curricula at all levels, and the use of other formal and informal channels to reach youth and children with information; promoting the integration of disaster risk reduction as an intrinsic element of the United Nations Decade of Education for Sustainable Development for 2005 to 2015 (UNISDR 2005:9). The implementation of

local risk assessment and disaster preparedness, as well as activities in schools for learning how to minimize the effects of hazards would have to be promoted (UNISDR 2005:10).

The two major objectives of the 2006-2007 World Disaster Reduction Campaign made by the UN/ISDR secretariat and its associates are disaster risk education and safer school facilities. The Campaign with the name "Disaster Risk Reduction begins at school" plans to educate and rally Governments, communities and everyone into making sure that disaster risk reduction is entirely incorporated into the school curricula especially in countries which are prone to natural disasters, and that school structures should be disaster-resilient. The Campaign is in association with UNESCO, Action Aid International, the IFC, and the ISDR's thematic cluster on knowledge and education (ADPC 2007:4).

Another international conference on school safety also took place in January of 2006 in Ahmedabad, Gujarat, India which again asserted the HFA for Action 3, "Use knowledge, innovation and education to build a culture of resilience at all levels," and the UN Millennium Development Goal 2 to "Achieve universal primary education" by 2015 (ADPC2007:4). For ensuring safe schools and community environment the immediate priority was to mobilize parent, student, local community and school staff to champion school safety. By 2015 the schools are meant to prepare and implement school safety plans inclusive of measures to be taken together within school premises and in the immediate neighbourhood; promote active dialogue as well as exchange between schools and local leaders including police, civil defence, fire safety, search and rescue, and medical and other emergency service providers. School children must practise safety measures in all aspects and places of their lives (ADPC 2007:5).

3.5. Disaster management as part of high school system

It is commonly accepted that schools can be used for distributing information and for offering a meeting point between those who are looking for ways to reduce the effects of hazards. Therefore it is suggested that a plan for disaster education be included in elementary, secondary and high school textbooks worldwide. As has been mentioned before some countries have already taken the initiative so the rest of the world should follow suit (Izadkhah & Hossein 2005:142).

Most less developed nations, such as Iran, Nepal, Vietnam, and others, came up with approaches which prop up disaster education within schools. The aim was to incorporate information that may be used by children as the next generation in order to prepare them as future leaders in raising community awareness. Ultimately this helps in building community resilience against recurring disasters (Izadkhah & Hossein 2005:142).

3.5.1. Institutional arrangements: disaster management committees in high schools

It should be mandatory for schools to have a committee that deals with disaster risk management. The committee should be responsible for providing up to date and relevant school disaster awareness programme. Meetings can be conducted when schools open and regularly throughout the year. This will inspire comprehensive preparedness both on individual and group level. The committee can get help from trained disaster management staff and can help them in doing drills such as evacuation drills. The leaders of the school and members from other organisations should be involved so that the committee becomes competent (IFC s.a:5).

The school disaster management committee will help the school in preparation of the school disaster management plan. Collaboration is effective in creating a sense of connectedness and belonging, which is vital to successfully mitigate emergencies (McArdle 2004:153). School safety should be the concern of the entire school community. This effort requires leadership and coordination by school administration and involvement and participation by all sectors of the school community (IFC2 s.a:5).

The committee would work representing the interests of the Department of Basic Education in relation with disaster management framework for schools. They would arrange for the mock drills that involve experts to confirm the disaster preparedness as well as recognize any areas where the learners would be lagging behind (ADPC 2009b:13). The committee would need to ensure that students at all levels participate in the disaster management programme. This would ensure that even the future generations would be aware of disaster prevention there by creating secure communities (IFC s.a:7).

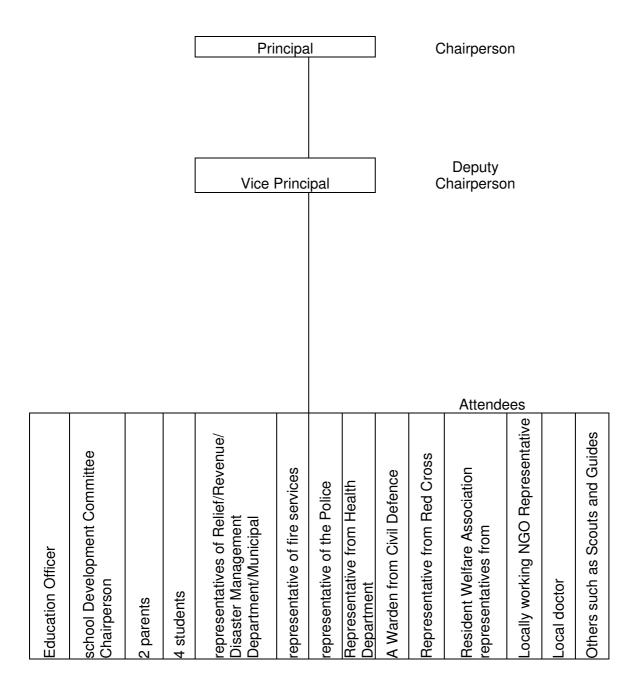


Figure 3. 2: School Disaster Management Committee

3.5.2. School disaster management scheduling

The objective of school-based Disaster Management (DM) planning is to guarantee that in case of an emergency both the students and the staff would be secure. The emergency management plan is a way by which this can be achieved because it would ensure that there is minimal confusion and people are aware of what steps to follow in order for them to stay safe. Risk reduction measures against potential disasters would as well be covered (South Asia Disaster 2009:4). Below is an outline of an exemplar School Disaster Management Plan.

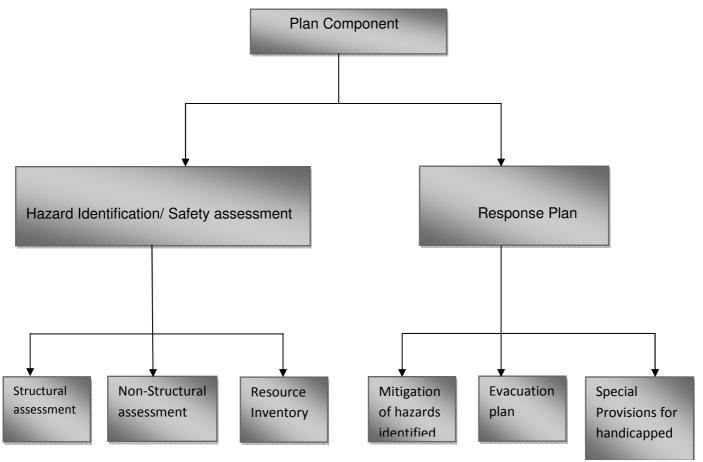


Figure 3. 3: School Disaster Management Plan

(Source: Delhi Disaster Management Authority s.a:3)

The school disaster plans are meant to facilitate the inclusion of disaster management within the school curriculum. It also shows the different aspects that would need to be attended to for the programme to be effective. Disaster management education needs to progress for the duration of the school calendar year. Interaction with the communities through disaster-related dialogues which lead to the designing of home emergency plans is encouraged. The hazard identification would entail learners taking part in the vulnerability assessment. The plans would encourage the implementation of school designed programmes in the society to enhance community-based vulnerability dialogues as well as the incorporation of hazard school education programmes into programmes that are running within the community. Rehearsal of preparedness responses for the learners would be done by means of mock-up (Dufty 2009:15). The disaster management plan also facilitates the meeting of all the people with an interest in disaster management programme within the school, and this would help minimize the chances of misunderstandings and replication of duties (ADPC 2009b:19).

3.5.3. Disaster management schedules being communicated to all stakeholders

In Australian schools, communication and distribution of information are fundamental to effectively executing safety programmes. Most schools post their emergency management plans on the school's website and intranet; some schools use emergency management information as screen savers and wallpaper. As a result the information is easily accessible to everyone. They conduct regular meetings with all stakeholders to ensure that information is given to all, and that resolutions are clear to everyone. Usual channels of disseminating information such as bulletin board notices, home newsletters and announcements at school assemblies are effective in communicating safety-related messages to the school and community.

Yet again, the participation of emergency service personnel in this course of action makes people confident and encouraged. Regular newsletters and information bulletins are distributed to schools, departmental authorities as well as emergency service agencies (McArdle 2004:153). The parents have to be updated on the developments and they need to be sure that their children would be secure at school in case of a disaster happening. Parents should provide contact information to be used in cases of the emergencies as part of the communication network (IFC2 s.a:14).

3.5.4. Principal and educators as part of the curriculum

3.5.4.1. School principals' responsibility in disaster management

Principals have a role to play when it comes to the inclusion of management of disasters in the school curricula. Thus the significance of principal training cannot be taken too lightly. Principals' efficiency is one of the influential determinants of learners' accomplishment and school development. Thus to get the most out of the school processes, principals would be required to communicate the vision and mission of the school, breakdown the school mission into obviously quantifiable goals, delineate the accepted principles of performance, composition of the school culture actions and valuable approaches that all those who have a stake in the day to day running of the school, must use to achieve these targets (Kimenyi & Thuo 2011). As an efficient administrator the principal ought to:

- Systematize all the school possessions to sustain and advance education.
- Endow with decision-making control.
- Be able to connect appraisal and control to educator professional improvement.
- Bestow authority to educators by allowing them to take part when decisions are being made pertaining to all the plans inclusive of disaster management (Kimenyi & Thuo 2011).

The disaster preparedness scheduling guide for Utah Schools in the USA stipulates that the school principal would take a leading role during the formulation, continual review as well as dissemination

of a school's disaster preparedness plan. The principal would be mandated to assign somebody to take action in his/her absence. The principal would be expected to set up a school disaster preparedness plan committee (USOE 2007:2). Weatherford public schools in Oklahoma, USA has emergency operating actions which outlines that the principal would be expected to ensure that disaster education for educators, support workforce and learners is accomplished annually and that at least two disaster preparedness drills, are performed at some stage in the school year (WPSOK s.a).

The principal would have to keep in contact with emergency management services such as the police force, the ambulance services as well as the local disaster management centre. This would enable the principal always to be aware of any impending catastrophic event within the community. The principal would be able to easily organise emergency preparedness programmes using the guidance from these external organisations. The principal would have meetings with the bus drivers putting them in the picture of their contractual obligations and responsibilities in the event of a catastrophic event (RLRS 2007:3).

The Gridley Unified School District, in the USA disaster preparedness plan stipulates that the principal will assess the state of affairs in any particular urgent situation and, taking into account the safety of learners as well as the state of the school and locality, will then put together some points as a suggestion to the Superintendent (GUSD s.a:3). The principal will have to ascertain that each classroom has a classroom emergency folder that is correctly labelled and positioned in a well-known place and close to the door. The folder will have useful information and material for the class educator for use during an emergency (GUSD s.a:5). This would help calm the situation.

The crisis management plan for St Agnes catholic school in Illinois, USA, outlines that the principal would organize educator training for cardiopulmonary resuscitation (CPR), First Aid as well as the use of fire extinguishers (St Agnes 2011:11). This would help to ensure that all the educators would know what to do in the event of an emergency occurrence resulting in fewer chances of learners being harmed.

3.5.4.2. Educators' knowledge of disaster management concepts

Educators who are knowledgeable about the significance of understanding and incorporating disaster risk reduction strategies in class lessons or school activities can control the overall perception of children about the long-term need to foster a culture of resilience (Reyes et al 2011:3). Educators are regarded as the source of strength for the community having high ethical standards. In discussion groups educators could be introduced to wide-ranging appreciation on flood hazards in addition to other catastrophes; facts, skills on flood management at school and family circle; human well-being and early warning system. Educators would be actively involved in discussions on achievable performance that might be embarked on at schools to teach learners

and augment public awareness on flood risk reduction, as well as assessment of flood effects and coming up with a flood management map for use within the school environment and the surrounding communities (ADPC 2009:32).

Hands-on experiential education is the most successful technique to disseminate knowledge (Wisner 2006:10). In an ideal world, a disaster appropriate curriculum would no more than pass on knowledge of the natural hazards themselves, but learners would also take an active part by examining the school building environment, moving out of the school yard to map the neighbouring communities, and they can meet the elders so that they can consult, referring to extreme natural catastrophes that had taken place in earlier periods. As the students are learning indispensable proficiency in paying attention, writing, reporting and mapping would have to be reinforced (Wisner 2006:10). These skills will have to be inculcated into the educators' training.

Educators from Senta Luia high school of Pasig City in Philippines were also involved in the writing of the DRR curriculum together with specialists from the Department of Education (ADPC 2008b:22). Educator involvement could result in the designing of a curriculum which is more relevant and user friendly because as the implementers they would bring in their classroom experience. In those educational systems where educators are given a chance to decide on the disaster-related materials to use in class, creative educators can willingly access and incorporate these materials into their lesson plans or use them as complementary resources for learners interested in exploring further, than what is taught to everyone in the class (Petal 2008:26). In Indonesia educators are urged to come up with DRR workbooks for use within their local set-up with the foundation being the acceptable competencies of learners. Schools that are located in communities highly susceptible to catastrophes were mandated to design other teaching resources suitable to disaster risk reduction for use within their setting. To support educators in Thailand when performing lessons that would require learners' active participation such as hazard mapping, Disaster Imagination Game (DIG), and evacuation exercises, an educator's guide was designed which would help to make possible the educator's use of the textbooks (Reyes et al 2011:13).

In Java, Indonesia when an educator's capacity was being assessed, it was found that most educators acknowledged being aware of the existence of the Disaster Management law and having been taught about the disaster laws. Educators also indicated that they had taken part in fire drills, guidance on trauma healing, the measures to alleviate the effects of floods, volcanoes, search and rescue and leading the Boy or Girl Scouts (MPBI 2008:7). Where the educators did not possess the necessary skills that would enable them to impart DRR-related concepts, their capabilities would need to be improved.

During and after an emergency event the educator has specific duties to undertake, namely directing evacuation of learners towards or from the place designated for meeting; offering first-aid services where the need arises as well as ensuring that all learners are accounted for (Jefferson

s.a:92). These duties can be simulated when learners are undertaking mock drills for various hazards.

3.5.4.3. Workshops and training for educators and principals

According to Anderson (2010:10) enhancing educators' own knowledge and their capacities to strengthen learners' capacity for critical thinking is essential. Pedagogy, the skill of teaching, is fundamental for the proper dissemination of DRR principles and practices to learners. Hence, a well skilled or an extremely stimulated educator would be able to help learners understand better using a second-rate curriculum whereas an inadequately taught or uninterested educator will have no or little influence on the learners, even when using a high-quality curriculum. Consequently, preliminary educator tuition along with in-service guidance are indispensable if learning within the high schools is enable children to have an enhanced hazard understanding and transformed risk conduct that undulates from the classroom into the society where these learners are members (Wisner 2006:10).

In Costa Rica the Ministry of Education's Office of Environmental Education has skilled 120 cadres so that they will be able to impart knowledge about disasters in all the country's governmental regions. These cadres have managed to coach 6 000 educators. Educators were urged to build up programmes with hazards and patterns of susceptibility in a precise region as the foundation. Learners would then be expected to have the benefit of dynamic, participatory scholarship all the way through hazard mapping along with compilation of data from the societies from which they come (Wisner 2006:21). The Philippines Department of Education developed the DRR resource manual which provides a uniform or standard knowledge for educators and the education administrators covering both DRR concepts for curriculum integration and guidelines for school safety and post-disaster continuity of learning. This serves as a ready reference on human induced hazards such as structural collapse, fire, vehicular-related accidents, chemical spill, electrical blackout as well as food poisoning and natural hazards while outlining what to do before, during and after disaster situations (Reyes et al 2011:13).

In Madagascar education officials and teachers in five high risk regions were trained DRR concepts and measures as well as the early warning systems. Educators and officials were also made aware of their responsibility of getting in touch with the communities residing within the high risk areas making sure that they received important warning messages. They were also trained to guarantee the physical well-being of children during an emergency (UNICEF 2011:14). Disaster Risk management's handy guidebook in Madagascar has been incorporated in educator's training in four subjects, namely life science, Malagasy, French and mathematics (UNICEF 2011:14).

At countrywide level in India, several tuition sessions were presented to educators to prepare them for incorporating the lately established subject matter of disaster management. India's Ministry of

Human Resource Development and the National Council of Education Research and Training came up with training units for teachers where they would read on their own without attending any classes and teacher educators with the technical support from United Nations Development Programme (UNDP) to enforce the health, safety and well-being of children in the long run. Themes that were covered included:

- Wide-ranging structure for secure school surroundings
- ❖ Disaster risk reduction, built environment and non structural security of schools
- Mental and physical well-being of learners
- Security in organization of mid-day food preparation and distribution to the learners during school times
- Separation
- ❖ Being in the know of the responsibility and tasks to be carried out by various stakeholders involved in school safety (UNSIDR 2006:36).

Senior educators and principals throughout India were also trained in disaster management issues to ensure proper curriculum implementation by way of two Master Trainers' programme. For each of the two programmes emphasis was on causes, preparedness and mitigation of an assortment of hazards. Twenty-six such programmes covered 2 000 educators who could then play an active role as resource for their school, the surrounding schools as well as the surrounding communities (Sharma & Dey s.a:7).

Ms Rama Negi, an educator at TGT Government Senior School took part in the training of Master Trainers' workshop in Shimla, India which assisted her in actively engaging the school principal to ensure the design and implementation of the school disaster management plan. She also considered coaching 96 scout guides in disaster awareness and response (SEEDS s.a: 38). This highlights the importance of equipping the educators with the necessary knowledge that would enable them to competitively contribute towards disaster risk reduction within their schools or communities.

3.5.5. External organisations assisting schools in disaster management

In Australia, for example The Country Fire Authority provides the brigades in school programmes and uses a mobile education unit in its education of primary students while Melbourne Water has an animated 'Flood investigator' programme that can be found online and is supported with lesson outlines, teacher's notes and worksheets (Dufty 2009:14). Mobile units can reach all schools that are accessible by road or other means of transportation; hence more learners would acquire the important disaster risk reduction skills. The online programme cannot be accessed by schools lacking Internet facilities and this would be a disadvantage to their learners.

Sustainable Environment and Ecological Development Society (SEEDS) coordinated with Geohazards International, US Agency for International Development (USAID) and the Government of Delhi to come up with an instruction manual on non-structural mitigation (SEEDS s.a:32). Under the Gujarat School Safety Program in India, SEEDS facilitated the inclusion of the subject of disaster management in the school curriculum (SEEDS s.a:36). In India, SEEDS undertook a programme to prepare school educators with information, skills, and equipments for conveying superior education on disasters by way of a certificate course under Global Open Learning Forum on Risk Education (GOLFRE). This resulted in the educators and the school administrators being geared up to face disasters and being able to minimize their impacts (SEEDS s.a:38).

Singapore National Defence Forces (SNDF) has integrated children in DRR by establishing the National Civil Defence Cadet Corps. SNDF sent liaison officers from the fire station to schools to coach learners on techniques that would enable them to cope when faced with emergencies and threats (Cameron & Norrington-Davies 2010:4).

3.5.6. School curriculum for disaster management

Natural hazard education is defined as any scholarship process or motions that lead to increased capacities within the families in a community making them less susceptible to natural hazards (Dufty 2009:14). The extent to which an assortment of characteristics and resources on human well-being, protection and hazards has been incorporated into the school curriculum varies from one country to another (Izadkhah & Hosseini 2005:140). The introduction of disaster awareness and risk reduction education in the high school curriculum would promote better understanding amongst the learners as well as their educators about the immediate built and ecological environment in which they and their families live, thus, helping to reduce the risk faced by the community (RCC 2007:1). Disaster prevention education is imperative at all ages groups, not just when a person is still young and going to school, but also when one is an adult member of the community. The learners' involvement can endow them with permanent returns in terms of logical judgment, and problem solving capabilities. It can be a booster against casualty, harm, shock, and loss of accommodation, source of income in addition to communal or family cultural artefacts (Petal 2008:25).

The education sector offers an unexploited opportunity to minimise disaster risk and combat climate change. Education is a critical component of adaptive capacity that is on how people are educated and the content of education provide the knowledge and skills needed to make informed decisions on how to adapt individual lives, additional to ecological, social, cultural and economic systems in a changing environment (Anderson 2011). Education can be considered as one of the unsurpassed means to organize any level of a society for any unforeseen catastrophic event. By incorporating the preparedness programme into the learners' educational activities the awareness

plans would in the end become part of the family's way of life. It has been noted that the level of parents' appreciation of information coming from well-informed children is usually very high and this can be taken advantage of when disseminating crucial information, which is supposed to reach the various families within the community (Izadkhah & Hosseini 2005:139).

3.5.6.1. Covering hazards in the curriculum

Learners will be able to have a better understanding of concepts on disaster prevention when the focus is mainly on those hazards that have already affected the area or those that have the greatest chances of impacting on their communities. Learners will be able to relate to the experienced situations, and be enlightened on the kind of measures that would be helpful in the event of the calamity returning in the near future. It is necessary to discuss with the learners the evaluation and scheduling processes for risk reduction, precise instruments to be used for risk reduction, governmental coordination and expertise required when reacting to a disaster, community relationships and problem-solving abilities that are important. Learners should have a clear appreciation of where and how they can take an active role in the discussed processes (Petal 2008:25). School natural hazards education is a useful tool that could be earmarked to reach all the vulnerable groups and organisations, particularly those residing in especially high risk areas such as close to the site of volcanic eruption and as well as those within the caravan parks that are usually not reached by the government agents who have the mandate to educate the communities (Dufty 2009:14).

3.5.6.2. Learner centred disaster management culture

Learner centred DRR is planned and put into practice with exceptional consideration being given to the requirements of the children as they have specific vulnerabilities (Back et al 2009:7). Capabilities that learners have, depending on their phase of maturity, form the foundation for their active involvement in emergency reaction, awareness in addition to mitigation (ADPC 2007:1). Within the Zimbabwean system of governance, the school is the central point for information transmission where it the need for transformation in the way people interact with the environment was highly stressed in order to pave the way for good hygiene customs. The programme merges curriculum development with provision of basic hygiene kits and teacher training. The focus was on imparting the knowledge as well as proficiency required by learners to reduce the threat to be experienced as a result of disasters. In the Zimbabwean scenario, it had been the spread of waterborne diseases such as cholera as a result of flooding and poor sanitation (Back et al 2009:13). Endorsing children's right to be heard entails recuperating the visibility of children's desires, improving their logical reasoning capabilities, and motivating the acknowledgement of their prospective abilities as driving forces of change. As children turn out to be more noticeable and

appreciated in their commune, their longer term susceptibility to climate change as well as disasters can be minimised (Back et al 2009:19).

3.5.6.3. Disaster management part of curriculum units

A curriculum unit is a process whereby specially developed units, components or sections are setup, highlighting the importance disaster risk reduction into existing courses. In an ideal world curriculum units are intended to fit into a number of definite course curricula, at particular grade levels, for a certain period. India is an example of a nation where curriculum units on disaster risk reduction have been developed and made a requirement and a yardstick for all the learners in high schools. For the learners to take the concepts on disaster to be as crucial as any other concepts they are learning, they would have to be incorporated in the examinations that they write (Petal 2008:26).

3.5.6.4. Disaster management principles infused in curriculum

Curriculum infusion can be defined as a technique where disaster risk reduction materials would be dispersed right through the curriculum, using lessons, readings, activities and problems, enriching the active programme of study rather than displacing it (Petal 2008:26). For instance, in Iran the education of children and young people in disaster preparedness has been incorporated into nursery, elementary, secondary and high school levels on a countrywide scale covering both rural and urban areas where it forms part of the main programme of study taken by all learners. All this is achieved through formal and informal means including special materials in the textbooks, standalone texts, films, nationwide "safety drills" for children of all ages, writing and drawing competitions along with exhibitions, paintings and posters in educational environments as well as using songs, games, puzzles, and other educational tools (Petal & Izadkhah 2008). Learners doing 8th and 12th grade that study geography, would learn about seismic hazards as well as safety methods from a chapter entitled safety against earthquakes that is incorporated in their textbook. In addition a textbook entitled Earthquake Preparedness has been made part of the programme of study for grade 8, 9, and 10 (Izadkhah & Hossein 2005:144).

In Macedonia, procedures for protection against catastrophes and storms are taught in geography. In physics, chemistry, and biology various concepts are tackled such as: measures designed to safeguard against poisonous chemicals such as benzene and other types of poisoning; protection of living flora and fauna, first aid, disruption of ecological food chain, biological weapons such as anthrax, epidemics such as cholera and hepatitis as well as other contagious diseases. Learners will be equipped with the required skills for prevention and protection against these hazards. Physical and health care education, evacuation drills, use of shelters in addition to natural places for protection, immobilization, saving and transportation are as well taught so as to minimise the number of casualties after the disaster occurrence. In addition, there is a subject of Peace,

Defence and Protection offered in the reformed high school education, which is offered for 36 lecture hours. Though it is an optional obligatory activity, students get to acquire knowledge, skills and capability of self and collective protection and safety (Sinha et al 2007:7). The disadvantage as earlier stated would be that within an optional subject matter some learners would not benefit at all in any way.

Secondary schools in England which are part of the United Kingdom have more or less entirely incorporated natural disasters education within the geography programme of study. In all other subject areas within the national curriculum, disasters are not considered part of them, making it optional for educators to include any activities related to disaster. Although sciences as well as design and technology are subject areas where disaster concepts can be learned, educators are not at all enthusiastic to add more work to what they already have (Sinha et al 2007:11). The most noteworthy aspect of teaching about these catastrophes in geography lessons is that they are a component of topics in a National Curriculum on tectonic processes, geomorphologic processes and weather and climate which are basically physical geography subject matters. A good example of how educators disseminate information pertaining earthquake and volcanoes would be for the learners to study the reasons why they take place, where they take place, how they transform the landscape in addition to the case studies of recent events within the local environment. Newspaper cuttings with stories related to the incidents of disaster experienced can be analysed as well as interviews focussing on those individuals with a personal experience can help to provide an outline of the social aspect that would be mostly at risk within a given community (Sinha et al 2007:11).

Some educators would go a step further by highlighting the effects of these catastrophes on human beings. For instance, a piece of writing in Teaching geography in July 1996 an activity for advanced level pupils, the centre of attention was on the effects on human beings' day to day living and the problems they face pertaining to weather and climate where Hurricane Erin was to be discussed (Sinha et al 2007:11). Despite the fact that all advanced level courses include modules that incorporate teaching about natural disasters in one context or another, these modules are not always obligatory and this prevents the development of a culture of disaster prevention which is supposed to be inculcated within people's way of life from the time when they are learners (Sinha et al 2007:11). Only the learners who choose or whose educators decide to take the option with disaster-related concepts are to benefit.

Within Australian school communities, disaster management was incorporated into the conventional programme of study and educational guiding principles. For instance, in many schools a whole school approach is used to uphold the learning, physical as well as mental health and well-being of all learners and staff through the institution of disaster-related guidelines, appreciation of the disaster principles and practices as well as the establishment of partnerships between all crucial stakeholders (McArdle 2004:51).

One of the national boards for school education in India, the Central Board of Secondary Education, compiled the first text book on disaster management at secondary school level in 2003 (UNISDR 2006:35). During the first year learners would be taught key issues linked to their dealings with the flora and fauna as well as the physical environment surrounding them. The diverse natural hazards and disasters that occurred as a result of human factors that had been encountered in India would be discussed and their causes and the consequences outlined. During the second year learners would deal with disaster management as well risk reduction. Learners would in the third year be equipped with skills that would enable them to survive during the period of a disaster, search and rescue methods and emergency planning for their families as well as other community members (UNISDR 2006:36). Needs and risk assessment done by the Lao PDR government resulted in the development of DRR curriculum which included traffic accidents as well as a section on alcoholism and drug abuse. The DRR curriculum was integrated into Natural Science and Social Studies at grade 7 (ADPC 2008c:12).

In Nepal, disaster-related topics are taught in science, environment and social studies subjects for grade 8 to grade 10. For instance, flood, landslide, soil erosion, pollution, and epidemics are more focused on than other disasters, especially by most science educators. In each subject, the causes as well as nature of disasters, effects of disasters, lessons from past disasters, disaster mitigation, preparedness, response-rescue and relief, reconstruction and rehabilitation, and role of community are taught. Earthquakes and windstorms are not covered within the programme of study, leaving learners not well informed about these hazards (Sinha et al 2007:7). Learners would be expected to have a better understanding as the study is mainly centred on the hazards that have been affecting the country. The parents will also be able to connect with the learners when discussing their past experiences making them more receptive to the information their children bring from school.

3.5.6.5. Case studies of curricula that incorporate Disaster Risk Reduction

Disaster management course within the school

Standalone courses are specific course curricula, designed purposeful for disaster risk reduction. For instance, the Maiko high school in Japan has a number of courses in disaster management that are taught to a small grouping of learners on an optional basis. In Turkey a course in seismic-resilient construction is being designed as a requirement for building trades majors for learners in vocational high schools. In some instances the school curricula are considered to be full resulting in these courses being done by certain groups of learners or are considered to be electives. Though these courses have an imperative role to play passing on important, in depth knowledge they reach only a tiny number of students as some would leave the high school without having acquired any disaster-related

knowledge. These standalone courses will only have an imperative consequent when all the learners are given a basis for disaster risk reduction (Petal 2008:25). When all learners become acquainted with disaster knowledge they will suffer less and will in the long term be resilient. Thus, the option of a standalone course will not be the best choice.

Curriculum for schools in Myanmar

The school curriculum for Myanmar integrates DRR at primary in grade 5, lower secondary in grade 6, 7 and 8 as well as in upper secondary level at grade 10 and 11. The aspects of DRR are covered in some topics that are incorporated into a variety of subjects, namely life skills, general science, English and geography.

Table 3.1: Myanmar' School Curriculum Integrating DRR

LEVEL	GRADE	TOPIC	SUBJECT
PRIMARY	5	Caution in Emergencies (floods, tsunami, earthquake, fire)	Life Skills
	6	Thunderstorm	General Science
	U	Emergency! It is Flooding	Life Skills
LOWER SECONDARY	7	Disaster Preparedness (disaster family plan, emergency kit, evacuation map)	Life Skills
		Storms	General Science
	8	Earthquake, Landslides, Safety in Case of Fire	Life Skills
UPPER	10	Earthquakes	English
SECONDARY	11	Earth Surface Processes	Geography

(Source: Reyes et al 2011:10).

Although the government of Myanmar has succeeded in coming up with a curriculum for schools which incorporate DRR, there are challenges that have hindered the smooth progress in the implementation part. For instance, the programmes within the schools are so tight that the time designated to DRR practice would not be sufficient. Students' concentration and involvement are also being hindered by shortages in DRR linked coaching aids. The school summer holiday which is three months long is another factor limiting the curriculum performance (Aung 2010:14).

Curriculum for Philippines

Education and training in early warning systems enabled children in Philippines to gainfully become skilled at climate change adaptation, and on how to reduce their susceptibility to disasters. This includes learning how to use the rain gauge to measure the amount of rainfall received within a given area at a given period. Learners would be actively involved in disaster simulation and drills as well as carrying out risk mapping and learning first aid, swimming and water safety. Children were then encouraged to express what they had learned through theatre and music activities, as a result delivering information on

impending hazards and the realistic solutions to the hazards to their communities. The efforts have already saved lives (Anderson 2010:10).

The Department of Education, educational specialists, acknowledged the requirement that DRR be incorporated in other grades as well, since they have only been developed for grade 7 which is the first year at secondary school. The challenge would be that learners in other grades are not benefiting in terms of knowledge, as well as being prepared through practical drills. It was noted that over 200 000 educators required training that would enable them to effectively deliver during the teaching and learning sessions (NDCC s.a:7). If educators are not well equipped it will negatively impact on the learners' performance. Educational materials for use during DRR lessons are still not enough (GFDRR s.a:97). This would hamper the progress as learners would at times have to wait for their turn to make use of the few available resources.

Table 3.2: Curriculum for Philippines incorporating DRR (Source: ADPC 2008b:20)

Grade	Subject	Chapter	Name of chapter	Objectives	Integrated	Time	Pedagogy	Content
					Unit 1:			
	Social			learn about safety at	Natural	40		
7	science	cience 1 Family disaster plan		home	hazards	minutes	Instruction, discussion	1. 4 Steps to safety 2. Disaster lit
			Chapter 2:	learn about EQ,	Unit 1:		Lecture, group	
			Geological hazards	volcanoes, landslide	Natural		activities, analysis,	1. Causes 2. Impacts 3. Mitigation
7	Science	2	Lesson 1: EQ	and tsunami	hazards	1 hour	discussions	measures
			Chapter 3: Natural		Unit 1:		Lecture, group	
			hazards lesson:	Learn about weather,	Natural		activities, analysis,	1. Weather & climate 2. What is
7	Science	3	Tropical cyclones	cyclone, & typhoons	hazards	1 hour	discussions	PAGASA 3. Cyclone & typhoon
			Chapter 43: Natural				Lecture, group	
			hazards Lesson 2:	Learn about volcanic	Unit 1:		activities, analysis,	1. Volcanic eruptions 2. Lahars 3.
	Social		Windows into the	eruptions, lahars and	Natural	40	discussions, making	PHIVOLCS 4. Mitigation 5. Family
7	science	4	earth- volcanoes	mitigation	hazards	minutes	demo volcanoes	disaster plan
				Learn about tsunami,	Unit 1:		Lectures, group	
	Social			causes, impacts and	Natural	40	activities, analysis,	1. Causes 2. Impacts 3. Mitigation
7	science	5	Lesson: Tsunami	mitigation	hazards	minutes	discussions	measures
				What are landslides,	Unit 1:		Lecture, group	1. What are landslides? 2. What are
	Social		Lesson: Landslide	what are the causes,	Natural	40	activities, analysis,	the causes? 3. What are the ways of
7	science	6	and debris flow	mitigation	hazards	minutes	discussions	mitigation?
			Lesson: Climate	Learn about climate	Unit 1:		Lecture, group	1. What is climate change? 2What is
			change & global	change and how to	Natural		activities, analysis,	the impact? 3. How to reduce your
7	Science	7	warming	reduce risk	hazards	1 hour	discussions	impact on climate change
				The factors that	Unit 1:		Lecture, group	1. Causes 2. How to prepare
				cause fires and how	Natural		activities, analysis	for fire 3.How to protect life and
7	Science	8	Lesson: Fire	to prevent fires	hazards	1 hour	discussions	property
				Causes, impacts and	Unit 1:		Lectures, group	
				protection from	Natural		activities, analysis,	
7	Science	9	Lesson: Tornado	tornadoes	hazards	1 hour	discussions	1. Causes 2. Impacts 3.Do's and Don'ts
				What heat wave can	Unit 1:		Lecture, group	
				do to the body and	Natural		activities, analysis,	1. What is heat wave? 2. what
7	Science	10	Lesson: Heat wave	how to protect	hazards	1 hour	discussions	to do if at risk
					Chapter 3:		Lecture, group	1. What is soil erosion 2? Causes 3.
			Lesson: Soil erosion	Soil erosion and its	Natural		activities, analysis,	Effects 4. Control of erosion 5.
7	Science	11	& flood	contribution to flood	hazard	1 hour	discussions	Occurrence of floods

Curriculum statement for South Africa

Life orientation is the subject where pupils learn about the things that would enable them to relate to others as well as the society. The subject emphasis is on increasing the level of awareness, the value of using skills, principles of the society and attitudes in real-life circumstances, and involvement of learners in physical actions and community organisations and programmes (DoE 2007:7). The subject makes use of a holistic approach that would result in the move towards the individual, communal, logical, emotional, divinely, motor and bodily development and maturity of the pupil (DoE 2007:7). It can be noted that disaster management aspects fit within the specifications of the subject.

Life orientation is an obligatory subject for all the pupils within grade 10 to 12 which prepares pupils to face future social, environmental and economic challenges. This would then enable them to take actions that would impact positively on their lives and those of members within their communities (DoE 2007:8). Examples of teaching methods stipulated by the department of education are group consultation, case studies, field trips, presentations such as role play as well as researches, for instance doing a literature review (DoE 2007:14). Case studies and field trips could be used when learners are undertaking the participatory vulnerability analysis within the school and surrounding communities, but the current situation within the schools is that these activities are not being done. Hence, learners would not be able to come up with viable solutions to their school, family or community problems if they did not know their extent of vulnerability.

Life orientation Learning Objective one covers issues on personal well-being which stipulates that a learner is competent enough to achieve and preserve personal well-being. Assessment Standard one encompasses the application of an assortment of life skills to present verification of the capacity to plan and accomplish life goals. Assessment Standard three explore characteristics of a healthy and balanced lifestyle, factors influencing responsible choices and behaviour in the promotion of health, and the impact of unsafe practices on self and others (Dilley et al 2008:50). Under personal well-being the emphasis is on tackling matters linked to the avoidance of substance misuse, youth pregnancy, Human Immunodeficiency Virus (HIV) and Acquired Immune Deficiency Syndrome (AIDS), the promotion of individual, community and environmental well-being (DoE 2009:58). When promoting environmental well-being, learners are supposed to look at ways to manage the environment to avoid disaster occurrences.

Life sciences partially cover concepts related to disaster management. There is Learning Outcome three which entails the application of life sciences in the society. Assessment Standard two requires the pupils to compare and assess the exploitation and growth of resources and their products and the effects they would have on the surroundings and the

general public. Critical Outcome six entails the application of science and technology efficiently, and decisively showing accountability for the environment (Isaac et al 2008: ii). Environmental concerns are covered where for instance the aspect of greenhouse effect and global warming are covered (Isaac et al 2008:58). The learners would be exposed to the issue of increases in the carbon dioxide concentration within the atmosphere as well as to ways of minimising the carbon dioxide concentration within the environment. This could include the measures that would be taken to ensure the reduction of the carbon content which is said to be contributing to the global warming. This knowledge would help to reduce the chances of temperatures increasing, which could lead to flooding in some regions and drought in others. Though some concepts relating to the minimization of the risk of disaster occurrence are tackled here, the problem is that the subject is not done by all the learners. Hence, for instance the learners who will not be doing sciences in the FET phase will not be environmentally conscious, and this could lead to one engaging in behaviour with potentially negative consequences for the family and the community as a whole.

Geography Learning Outcome two covers the knowledge and understanding of processes and spatial patterns dealing with connections between humans, and linking humans and the environment in space and time. For Assessment Standard three grade 10 learners will be required to be able to explain the links between environmental problems and social injustices in a local or global context, while grade 11 learners scrutinize the concerns and challenges happening as a result of human and environmental interaction and in grade 12 the possible responses to these issues and challenges will be of great importance. For Assessment Standard four grade 11 learners would then look at different measures of conserving the environment, while addressing the human needs and grade 12 learners would examine different approaches used to sustain the environment (KZNDoE s.a:9). Hazards and environmental management are covered, thus some of the DRR aspects such as prevention, mitigation and preparedness are covered here.

3.5.6.6 Textbook content in South African Further Education Training phase

Life orientation (grade 10)

Unit 9 covers aspects on personal health and ways of avoiding road accidents. A number of emergency numbers are listed in this chapter, for instance the police; ambulance and child line for the learners to use in case of emergency to get help (Dilley et al 2008:36). These are numbers that learners should have at hand to minimise the chances of experiencing losses of property, injury or death of human beings.

Under citizenship education, learners are made aware of social issues affecting South Africa, namely AIDS as well as the environmental issues such as land degradation and then ways to tackle these challenges through use of local understanding (Dilley et al 2008). The increase in the level of awareness of, for instance the cause and effects of HIV would lead to learners being informed about the preventive measures such as abstaining and use of condoms.

Unit 22 tackles ways in which children are impacted upon by HIV and AIDS especially in relation to their rights. Learners are meant to be involved in the formulation of a school policy that would cater for the interests of the HIV positive learners as well. Learners, by talking about death and loss as a result of HIV/AIDS, will be empowered with how to deal with the situation in the event of them losing a family member (Marais et al 2005:120). Learners would be made aware of challenges to anticipate within the family.

Geography (grade 11)

Unit four covers concepts on drought and flood hazards. Effects of droughts and human response to drought are covered. Within activity 7 learners are expected to list the types of damage that would occur as a result of floods after having read the case studies. Ways to minimise and control flooding such as having the wetlands as well as construction of dams are covered. Oil spill and its control as a hazard is also covered (Dilley et al 2005). This would help to reduce the chances of flood hazard turning into a disaster, if the learners incorporate the learnt measures in their day to day living. There is a research assignment for learners on the ecosystem where they are expected to look at how human beings damage the environment, and the ways to minimize or lessen this damage (KZNDoE 2008:36).

Life orientation (grade 12)Stress management

Learners would gain proficiency in recognizing several stressors, classifying symptoms of stress, adopting stress management tactics, initiating personal techniques to minimize stress, recognizing and apply physical actions to deal with stress. Values and attitudes that will be inculcated in learners include showing tolerance and willpower, understanding, as well as demonstrating observation capability (Farhangpour et al 2007:2).

Health hazards

Learners will, after learning about health hazards, be expected to be in a position to identify human and environmental factors that could have an effect on their health. By recognizing health threatening factors in life the learners would be able to closely scrutinize their surroundings and their community. Coping with the challenges faced in a disaster and death is a concept where learners are indirectly exposed to what happens when a

community or family has been affected. Principles and mind-set being inculcated within the learners are precautionary in the direction of health problems (Farhangpour et al 2007:23).

Disasters caused by environmental factors as well as natural disasters are stated within the section, namely fires, floods, hurricanes, droughts and earthquakes. There is an activity 6, on fire, where learners comprehend a passage about fires in the urban areas. The learners would then propose approaches that might be used to prevent such disasters (Farhangpour et al 2007:30).

Activity 8 encompasses managing environmental disasters. The learners are expected to give the coping approaches that they can use at an individual level. Learners are to recommend three realistic and useful methods to make their community conscious of possible disasters, such as fire and flooding (Farhangpour et al 2007:32). Within the activity the disaster is well defined. It states that at commune level National and Provincial Disaster Management Committees have got to put in place plans for prevention, preparedness, response, recovery and rehabilitation (Farhangpour et al 2007:32). The textbook which is being used within the schools does not outline how the different activities of disaster management can be done. It also does not give a clear picture of how learners can be involved in their communities when undertaking disaster management. There is lack of depth on the concepts and principles of disaster management.

3.5.6.7 Learners' participatory vulnerability and capacity analysis

The realisation that people's vulnerability is a key factor determining the impact of disasters, has resulted in emphasis being shifted towards using 'vulnerability analysis' as a tool in disaster management (Yodmani s.a:482). Vulnerability and resilience are attributes specific to a certain person, community or agency. They do not belong to groups of unrelated individuals (Buckle et al 2001:15). The purpose of conducting resilience and vulnerability analysis is to highlight issues, needs and concerns and to work to effect change, to improve resilience and to reduce vulnerability (Buckle et al 2001:16). Participatory Vulnerability Assessment (PVA) is a method intended to bring about ownership of the practice, by developing awareness in learners of the powers they have in preventing a disaster from occurring (Das 2010:17).

People who are leaders of disaster risk assessment should be people on the ground and who are actively involved in the problems being faced by the community. The classroom is an important site in community PVA (Campbell &Yates 2006:10). The purpose would be to discover the threats encountered by the school as a result of the hazards, and measure the level of competence to deal with any catastrophic event (ADPC 2009b:14). After assessing their vulnerabilities learners would then need to connect disaster awareness and response to long-standing improvement within their communities or the school set-up (Actionaid s.a1:11). This PVA can then be extended into the

communities where the learners come from. Both educator and student understanding of disaster management would be considered in order to find out areas that need to be focused on (South Asia Disaster 2009:4).

The most important first step to take in planning should be to carry out a school safety assessment, which takes into account key factors such as local hazards, school vulnerability, and capacity in terms of resources (South Asia Disaster 2009:4). Learners from Churiyamai Secondary School in Makawanpur, Nepal singled out PVAs and vulnerability mapping as the most exciting skills they have gained (Actionaid s.a2:3). In Nepal, the introduction of PVA has helped learners to effectively contribute towards the establishment of practical solutions to lessening their level of susceptibility. They have developed a better understanding of hazards that could lead to disasters as well as related risks within the school and at home (Gautam 2010:37). After undertaking the PVA, students of Churiyamai Secondary School successfully advocated for the taking away of a high tension line that passed through the school complex. Learners in Sinakothi enlightened the community of the danger caused by using wooden electricity poles, and also engaged in ensuring garbage exclusion from community-managed ponds (Gautum 2010:38).

3.5.6.8 School and neighbourhood location maps

School site maps and neighbourhood maps are essential as they are used to record and give a vivid picture of the dangers as well as all the available resources useful for disaster management both in the schoolyard and in the neighbouring communities. They will help in the identification and consideration of ways to make up for the gaps so as to make people more equipped and less susceptible. Vulnerabilities and resources that can be noticeable on the school map include entrances and exits, emergency assembly area, gas line, electricity and water shut off location(s), building evacuation routes both underground and overhead dangers, hazardous materials sites, fire suppression equipment positions, first aid staging area, request and reunification gates individuals with disabilities and young children and response given on-site (IFC 2 s.a:12).

The following vulnerabilities and resources should be marked on the neighbourhood map:

- Emergency evacuation routes
- Emergency vehicle routes
- Alternative assembly area
- Temporary shelters
- Health facilities
- Fire station
- Hazardous materials sites
- Transportation resources
- Vulnerable groups

- Vulnerable built environment
- Roads and facilities
- Personnel ready to offer assistance during response and recovery
- Response activities covered off-site.

These maps should be found on the school safety bulletin board and should be incorporated in the staff handbook and staff orientation, and can also be made into pamphlets. Re-examination of the maps is important as well as re-evaluation of disaster prevention plans with time (IFS2 s.a:13). In Jarkata, Thailand students in many of the schools undertaking disaster risk reduction activities formed school preparedness teams that have produced action plans as well as evacuation maps, and nominated precise responsibilities to individual team members (Plan s.a).

3.5.6.9 Mitigation activities

The intention of including disaster alleviation education within the school programme of study is to increase, on a daily basis, capacities which can be incorporated into developing minds of the learners. Maiko high school, in Japan has gone beyond the normal ways of just teaching disaster mitigation lessons in classrooms; the school has taken the lessons further by implementing them in fieldworks. The elementary students take part in making safety maps; they are involved in workshops and volunteer work, and they also have interaction with the victims of the Kobe earthquake. The practical and participation education make the students to gain capacities on a daily basis (Suwa 2006:1). It is also very crucial to note that with age children's perceptions change as they mature and they as become capable of understanding the risk and impact of disaster. Through attainment of information about risk and management in social circumstances and the school environment they become more aware, and they are able to understand the nature of hazards (Dufty 2009:15).

3.6 Disaster management activities part of co-curricular activities

Co-curricular schooling refers to all the learning processes which are not part of the standard programme of study, and these will be undertaken by during assembly period, community meetings, exhibits where learners showcase their talents, special events such as the international day for disaster risk reduction, drills and exercises which are usually done outside the classroom portraying the circumstances in a disaster. Some of these activities present entertaining and engaging means to initiate the development of high levels of awareness as well as proficiency which is crucial for all learners (Petal 2008:24).

Co-curricular learning can be done in numerous ways, and can lead to a rapid start in the development of disaster prevention initiative at a minimal cost. Educators can make use of the co-curricular activities to bring in new concepts that are linked to the forthcoming lessons covering

disaster risk reduction concepts and this will result in the learning process being reinforced as learners will be able to relate with the given experience. Of these activities the most apparent will be the disaster drills where there are a variety of them that can be done depending on the hazards that will be encountered in the communities or those chosen by the educator to be studied. The learners will be equipped with crucial skills necessary to react within a drill. This will be done well before the actual drill either by their educators during lesson time within the class or by an invited expert within a given field at the morning assembly. These drills are performed right through the school calendar year, if at all possible, will be carried out during different periods within the school day of the week, and learners will not be forewarned to give them a chance to be trained, reflect on what have already been learnt and become better in terms of reacting (Petal 2008:29).

3.6.6 Learners visiting disaster museums

Children can be actively involved providing the activities they are learning amuse them. Children would in most instances retain more information and out of interest replay those actions for their families at home and for other neighbouring community members. Hence, the learned concepts would end up being disseminated to the wider community. For instance, some nations have disaster museums where learners would have an interest in attending as they feel the place to be a bit informal rather than being in the classroom where most things are discussed in a formalised way (South Asia Disasters 2009:12).

3.6.7 School disaster management clubs

Learners' potential and capacities could be made use of by way of establishment of children's clubs for DRR, environmental management, water monitoring, as well as animal care. Community service oriented clubs help develop students' analytical and problem-solving skills, as they research and identify hazards, tap into indigenous knowledge, oral history, public information, and scientific research and gain expertise to assess risks and identify solutions (Petal & Izadkhah 2008). In that way the societies they come from would be assisted as the learners would be able to come up with some resolutions that could be used when local municipal policies were being formulated. Following the 2004 Tsunami in Tamil Madu, India a kids club was formed and this provided a space for children to consider the impacts of the tsunami, and how they could reduce the risks to their community in future (Back et al 2009:26).

In many countries the guiding and scouting movements offer disaster preparedness training and accreditation, and some troops maintain long-term environmental and community initiatives, for example as Girl Guides do in Sri Lanka (Back et al 2009:26). Learners can be involved as rotating classroom representatives, student government volunteers, and through extra-curricular activities (IFC2 s.a:7).

In all 30 communities within Bangladesh where learners' brigades were assisted, they turned out to be important actors in their societies by endorsing a disaster resilient model of life and advancement. The learners have led ground-breaking activities in schools as well as inside their communities, namely the designing of school based DRR plans to be accomplished every year; working with the school management committees in designing and analysing the contingency plans; as well as the performance of school-based and community-based activities to increase the preparedness levels (ADPC 2010:6).

3.6.8 Natural disaster preparedness game

The Indonesian senior secondary school pupils used the Disaster Master which is an enlightening board game that put across the messages by way of answer cards to assist learners get an appreciation of the nature of natural disasters and the kind of response that would make them less vulnerable to the effects of catastrophic events. Earthquakes, tsunamis, floods, landslides, volcanic eruptions and hurricanes are the natural disasters that a learner gets to know about when they are using the game (UNESCO 2007:2:23).

The game would enable the learners to increase their capacities that would enable them to endure the effects of a natural disaster by way of appreciating the theories, identifying forewarning symbols, appreciating all the fundamental contributory aspect, being able to act in a way that minimise the effects prior to the disaster occurrence and also reacting in the correct way for the period of and past the disaster. Having played the game, the learner can be appraised to make sure the disaster risk theories being disseminated by the game, are clearly comprehended (UNESCO 2007:2:24).

3.6.9 Learners performing

To initiate disaster risk reduction communications in appealing, engaging and creative ways learners would need to be involved in cultural and performing arts, whether music, song, poetry, dance, puppetry, magic, street theatre, improvisation, pantomime or artwork. The use of all forms of arts to convey indispensable knowledge to parents and to the wider community is especially appreciated in the informal settings of assemblies and special events such as school prize giving day(Petal & Izadkhah 2008). Typical examples include the creative use of radio, with soap opera stories becoming very popular in Central America, a National Disaster Day with preparedness drills and street theatre in Colombia, puppet shows being used extensively in China, and the development of disaster games in the Carribean (Izadkhah & Hossein 2005:146). Whilst the community members are being entertained the message will be retained in their minds, thus contributing the increase in the preparedness levels. In Costa Rica learners would be given an opportunity to relate experience, discuss moral dilemmas, conduct debates and brainstorm. In this way learners would be able to identify the kind of social aspects that are vulnerable to any form of

a disaster (Wisner 2006:21). Nepal demonstrates that street dramas are the most successful way of raising consciousness about hazards and preparedness within schools as well as communities. Learners have been educated on ways to build up dramas on earthquakes, floods, fire, and sanitation (Actionaid s.a:3).

3.6.10 DRR competition for learners

DRR knowledge tournaments can be done involving many schools while radio or television broadcast would be used to share knowledge and competencies more widely. Sports day activities are an exceptional time for drills and demonstrations as well as for competitive games that introduce cooperative response skills such as water bucket brigade competition, fire extinguisher target practice, injury transportation relays, and knowledge games (Petal & Izadkhah 2008). As the learners are competing they tend to retain the gained knowledge which they would be able to recall when they are faced with the disaster situation and react positively resulting in minimal cases of casualty being experienced.

In Fiji, the National Disaster Management Office (NDMO) carry out annual essay writing contests on disaster along with disaster management, where the victorious schools and learners are awarded prizes and certificates. These contests are undertaken as a component of NDMO's National Disaster Awareness Week every year within the month of September (UNCRD s.a:4). In Bangladesh learners from targeted schools participated in quiz competitions on DRR issues. This was a success in that learners enjoyed themselves and the initiative attracted the attention of more learners into disaster preparedness programmes (ADPC 2010:8).

In 2006, school children from all over Sri Lanka gained knowledge on natural hazards through an All Island and Art Competition organised by the National Disaster Management Centre (Kreussler & Bitter 2007:14). During competitions in Mumbai, India an understanding would be created amongst learners from city schools as they explore behaviours that can lead to the minimization of disaster occurrences (Pednekar 2011).

3.6.11 Peer education

In many schools across the globe learners are given a chance to play the educator's role based on the concept that many people make changes not only based on what they know, but on the opinions and actions of their close, trusted peers. Peer educators would approach their mates using the language that they normally use when they are out of class. There are greater chances that learners would listen and take into consideration what they would be told in that informal setting. They work alongside the educators, run educational activities on their own, or actually take the lead in arranging and implementing school-based activities. Peer educators play a crucial role in raising awareness, provision of accurate information, as well as, helping classmates develop skills to change behaviour (UNICEF 2004). The Junior Red Cross Circles of Dipendra Higher

Secondary School, in Nepal performed sanitation campaigns to minimize the risk of snake bites after attaining DRM understanding (Gautam & Khanal 2009:11). In Honiara, the capital of Solomon Islands, trained peer educators are now competent enough to track seasonal variations, warn people of existing risks and carrying out activities that would enable them to look after their communities in the event of a disaster occurrence (Cameron & Norrington-Davies 2010:10).

3.6.12 Use of print and electronic media

In Israel, children are trained on the subject matter of terrorism by way of actually being involved in activities where they make use of their gas masks and they get skills that would enable them to come out of an attack without being harmed. In Cape Verde a radio show broadcasting preventive methodologies, responsiveness messages as well as protective measures is done with the aim of reaching the young people (FEMA 2010:10). The use of the radio is a very good initiative as it can easily reach all the parts of a country if the radio waves are mostly accessible.

On the negative side there are chances that the intended target would not be reached especially if the programme is done during times when there is a programme on the television which is of interest to the kids, resulting in them missing out on important issues being aired. Also learners from poorer families that do not have access to the radio would not be able to get the message, leaving them vulnerable to hazards affecting their local communities.

A school magazine, community brochures, theatre workshops and a 'River Game' avail important data for use by learners as well as children and adults members of the community outlining what ought to be done when they encounter hazards such as floods, drought, cyclones and forest fires that can turn out to be disastrous if they are not contained. The results have been considerably positive, not just in relation to learners and schools administrators being in a position to come up with emergency response plans and adjust their conduct, but in shifting stance taken in the communities towards the constructive functions that learners can partake (Back et al 2009:16). News coverage of catastrophes that would have occurred within other communities, and support promotion can create scenarios where learners would connect in symposiums and come up with practical measures at school (Petal 2008:29).

3.6.13 Importance of drills in schools and communities

For the duration of the disaster all life-defending activities would have to be performed without delay. Time would not be enough for meetings to be done to come to a decision on how to react, thus every person would be expected to have a clear picture of what to do to save human life, flora and fauna, as well all that is of significance to human survival. After a disaster further action such as evacuation to a safer place as well as ascertaining that all the injured victims are given first aid assistance that would help ease their pain while waiting for doctors to attend to them. Well trained educators as well as learners would guarantee the attainment of all these activities at the earliest

convenience. Hence, the need to perform drills and exercises as part of the preparedness plans. Drills and exercise helps the educator to analyse the level of preparedness within the learners and how the scheduled plans would work in the actual disaster situation (Tezu s.a:24). This is because drills imitate the commotion that is capable of unfolding in disaster circumstances (Fox 2011). There are three categories of drills, namely

- Simple drills that have particular skills as its centre of attention.
- ❖ Table-top exercises specifically designed for management and school-based leadership as they put emphasis on a range of organization tasks when a school has been hit by a disaster.
- ❖ Full-scale scenario drill that engages all the stakeholders within the society (Petal 2008:18).

Conducting standardised emergency drills is one of the essential customs that schools could initiate to increase response capacity expertise, and raise the preparedness levels required when undertaking evaluation, planning and risk reduction processes. Drills are fitting to both sudden onset disasters and early warning circumstances as they offer the prospects of recognizing training requirements, ascertain new reactions and instruct by way of demonstration which learners would imitate (Petal 2008:17).

Scenario drills afford learners an opportunity to exercise management of practical organization of the reaction as well as operational skills such as light search and rescue after the destruction of buildings due to an earthquake, fire suppression, hazardous materials control in case of spillages or explosions of trucks carrying containers with chemicals and logistics skills to pave way for life-saving, security, nutrition, shelter and sanitation, and psycho-social support (Petal 2008:18).

Drills offer learners a chance to repeat a specific action until the educator is satisfied that the learner has mastered the skill. The disadvantage of carrying out drills where the teacher pupil ratio is very large is that monitoring of the progress of the learners would not be easily done resulting in some learners not getting feedbacks. Some learners would deliberately not follow given instructions as they would know that they are not being seen by the educator.

The International Institute of Earthquake Engineering and Seismology (IIEES), the Iranian Ministry of Education, Ministry of Interior National Committee for Natural Disaster reduction, Iranian Red Crescent Society, Iran National Television and Radio, and many other related national organizations all took part to arrange these yearly drills to train learners and the school members of staff so that they would be able to correctly and swiftly react in the event of an earthquake hitting their communities (Petal & Izadkhah 2008). In Singapore there are special activities that are held annually where learners are actively involved to reinforce key DRR issues taught in school, such as Total Defence Day, Racial Harmony Day, civil defence demonstrations on fire-fighting as well as first aid, and demonstrations on emergency preparedness and management by the Red Cross and

National Civil Defence Cadet Corps. In addition a school-based full scale emergency exercise led by the Singapore Civil Defence is done at regular intervals where school administrators, educators, students as well as parents would take an active part (Reyes et al 2011:14).

❖ Fire drills

Fire is one of the hazards which most frequently have an effect on schools. Fire preventive measures include: removal and avoidance of fire hazard; safeguarding the electrical tools; standard fire avoidance through preparedness; smoke detectors, as well as sprinkler systems. Significant channels that can be used to mitigate fire risk include:

- Outward opening of doors of classrooms and laboratories for safe mass departure.
- Visibly marking with a sign all the exit doors.
- Having well designed and understandable exit routes.
- Exit route maps being pasted on each corridor as well as in each classroom.
- Fire suppression equipment such as the fire extinguisher being accessible on all the school corridors.
- Fire containment equipments having to be checked at a regular interval.
- Educators and older learners being equipped with fire containing skills.
- Schools undertaking standard fire drills (Petal 2008:15).

Billabong High International School, Baroda, India as part of its programme in the direction of performing thorough disaster management tuition and fire safety measures for its learners executed a fire drill in addition to evacuation activity where Baroda Fire personnel were engaged to assist to carry out the activity. The fire drill included a comprehensive fire evacuation and demonstration activity which included the students evacuating the premises along pre-decided exit routes; each segment of the fire drill was timed and supervised by Mr Ashutosh Khare, Sr Executive-Disaster Management, GAIL, and India. Learners were given a lesson on the use of fire extinguishers post to which the learners from grade 6 onwards had to do a demonstration to show that they were able to make use of the extinguisher. The drill helped to maintain the educator and the coordinator within the state of preparedness to minimise the chances of a fright when the fire actually affected the school (KKEL 2009).

The law in the USA entails that fire drills should be done as a way of increasing the building occupants' awareness of the fire hazard. At Perry High School in Ohio, USA a minimum of one fire drill could be undertaken every semester to prepare learners for unanticipated calamities. Once the fire alarm had been triggered, all the people within the buildings would be expected to locate a way to move out almost immediately. The rationale for undertaking

the fire drills would be to establish the limitations of the existing plan, and to advance the plan to reduce the time taken during evacuation (Buranathiti & Van Wey 2007:134).

Camden high school in New Jersey, USA have a school policy which stipulates that learners should walk out of the building swiftly and calmly while following the fire drill way out symbols that are found in each room. An assigned learner will make safe each room by turning off the lights as well as ensuring that the windows and the classroom door are closed. Educators guarantee their responsibility for all learners by inspecting to check if all the learners have moved out of the classroom and by safely keeping the attendance register. All the learners as well as the staff members will then be expected to move a distance from the building (Camden s.a). To move back a signal would come from the principal (James 2007:27). Trinity Grammar School Junior School successfully held the evacuation drills in the year 2011 (Trinity 2011:2).

In Japan, learners are actively involved in games such as "bucket brigades" with teams of children competing to check who would win by putting out the actual fire. Learners would pass on the bucket full of water from one end which would be the water source to where the fire would be (Petal 2008:18).



Figure 3. 4: Misaki high school drill games for fire suppression skills, Japan (Source Petal 2008:18).

It can be noted that there are a number of schools that are still lagging behind in terms of fire drills. For instance, in Kenya, most schools are not ready to deal with fires. Only a handful of these institutions of learning have fire extinguishers in offices, laboratories, stores and kitchens, although these fire extinguishers are not frequently checked for their effectiveness (Akali et al 2011:84; Otieno 2006).

Flood drills

The pupils of the Federico Villareal School in Tucume, Peru were involved in flood drills. The learners were given different responsibilities related to an event of flood emergency. For instance, some were to ring the bell to warn all the learners of the danger, getting rid of muddy water using container and shovels or carrying the injured learners to a safe place. The school principal acted as a narrator to the learners during the drill (Practical Action s.a).

The Walnut Grove elementary school, in Council Bluff, USA a flood drill took place after a call had been made from the superintendent instructing buses to arrive at the school. With the arrival of the buses the principal stated that the learners were to get ready to vacate the buildings (McRobert 2011). Hundreds of Walnut Grove school learners were prepared on how to respond in the event of the levees breaking resulting in them being exposed to the Missouri River. Learners peacefully got onto school buses. The drills enabled the county emergency manager and the school principal to realise all the things that worked and the changes that would be necessary (Doorlan 2011). For Mountainburg school district, Arkansas, USA, the Crawford County's Department of Emergency Management alongside local and state police as well as fire officials gave support in the flood evacuation drill, helping learners get to the elevated sites. Those who took part in the activity compared annotations to have a discussion about strong points and limitations of the flood evacuation plan so as to come up with a better plan (4029News 2011).

***** Evacuation

Evacuation drills would be undertaken to prepare learners for the circumstances when outside a classroom or school is safer than inside. The Illinois school safety drills Act, in the USA stipulates that schools ought to perform at least three drills. The local fire department would take part in one of the drills and endorse that the school had carried out the evacuation drill (IPA 2007:1). In the event of a crisis such as fires, explosions or other disasters it might be indispensable to direct learners to move out of their classrooms and gather at a safe place on/or close to campus (Joplin s.a). Gayatri Vidyalay School in India has two stairways and learners are well informed on which to make use of and at what time. During school hours, one staircase is used when going up and the other for going down. In the event of an emergency both staircases would be accessible to all for evacuation purposes (SEEDS s.a:26). Evacuation drills will be further improved by use of classroom and school evacuation maps as shown in Figure 3.5.

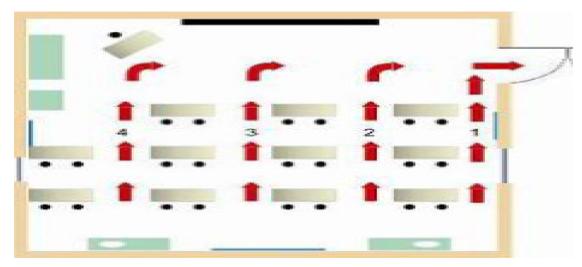


Figure 3. 5: Classroom evacuation map (Source DFID s.a: 20)

Figure 3.5 shows an example of a class evacuation map indicating how the learners are supposed to move from their seating place to the entrance. This would help to minimise commotion which can lead to some learners being injured as they push each other when trying to move out of the classroom.

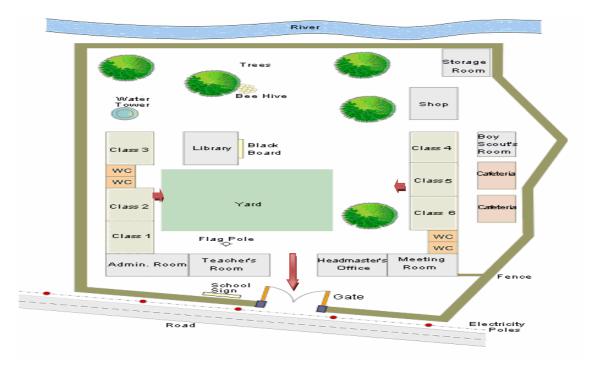


Figure 3. 6: School evacuation map (Source DFID s.a:20)

Figure 3.6 above shows the school map and the area where the learners would assemble in the yard after moving out of their classes. The map also shows the exit point which would have to be used to move out of the school yard. The presence of the two maps would help to minimise the time required to move all the learners out of danger.

3.6.14 Incorporating assemblies as disaster management support

Assemblies present the prospects of getting to all the learners during the course of announcements, short informative gatherings, dramatic episodes, commentary on the disasters that have affected the area, storytelling about achievements by other learners in relation to disaster risk reductions, puppetry, magic, showing video footage of disasters as they happen, learning poems or songs with important messages, giving out DRR material for their parents. Announcements would be done pertaining competitions to be done; games to be played as well as results of already played games; practical drills (Petal 2008:29).

Guest speakers who would be given the platform to educate the learners during the assembly sessions can comprise of survivors of disaster who can provide live lessons, civil protection staff, fire department educators, Red Cross/Red Crescent Society representatives, local non-governmental programme staff or volunteers (Petal 2008:29). The use of assembly sessions would be helpful especially when the invited guests would not have enough time to visit each and every class. On the negative side, if there is no strict monitoring by educators some learners would misbehave since it would be a large group, thus, hindering the attainment of the intended results.

3.7 Change in attitude

After acquiring knowledge about disaster causes, consequences, and risk reduction strategies learners no longer believed that disasters experienced were an outcome of God's determination. They indicated that in the event of a disaster they would not be terrified, and they were ready to deal with risks that were encountered within their communities (Gautam 2010). Learners now have a better appreciation of the tasks undertaken by their custodians in minimizing disaster risks by mobilising resources available within the confines of their community (Gautum 2010:20).

3.8 Learner behavioural change

Children can be prominent and valuable communicators in relation to disasters. To a certain extent things that are taught at school are afterwards passed on to the family members at home (RCC 2007:1). Where pupils learn and put into practice DRR principles from a young age the benefits are usually incorporated into the rest of their grown-up lives, attaining more advantages than when adults get hold of the same skills. The skills will be passed on to subsequent generations at an earliest convenience (Back et al 2009:10). It is commonly accepted that children always speak the truth therefore they can convey disaster preparedness information (FEMA 2010). Children can help in closing the gap between culture and technology. Furthermore they can provide more realistic and original ideas of how to be more ready when dealing with disasters, and also be involved in the recovery processes. Thus they become beneficial to their communities (FEMA 2010).

Confirmation from various disasters situations have shown that where communities had been organized and well-informed in relation to detrimental events, noteworthy decreases in fatalities

and physical losses were noted. In the case of Mali, the broadcasting of forewarning of the heavy rains through radio stations in 1998 led to a successful mass departure of over 300 persons from the flooded area. Another example is that of a nationwide programme in Cuba which elevated the people's preparedness for hurricane threats, and this enabled approximately 700, 000 people to be moved to a safer place collectively with their domestic animals during the 1998 Hurricane George (Izadkhah & Hosseini 2005:141).

According to RCC (2007:1) there are many documented occasions when the safety of a family or the protection of an important element of the household, have been tracked back to the safety lesson learned at school. The Indian Ocean tsunami was a reminder that children play an important role in saving and protecting members of the community in times of an emergency with the experiences of Tilly, a young British school girl, and a young Indonesian boy, who both escaped the tsunami and saved the lives of hundreds of people around them (ADPC 2007:2).

On December 26, British school girl Tilly Smith, aged ten, realised that there was something amiss while on the Maikhao beach in Phuket, southern Thailand with her family. The deadly tsunami waves were by then on their way activated by a massive earthquake off northern Sumatra that happened earlier that morning. Her intellect kept on flashing back to the geography lesson delivered by their educator just two weeks prior to their visit to a Thai resort (Owen 2005:1). Tilly's actions enabled the lives of 100 tourists to be saved from a beach (RCC 2007:1). Tilly's educator, Mr Kearney, made use of audiovisual teaching aids such as interactive white boards to harness geographic information online. Tilly's class had looked up U.S Web sites about tsunami early-warning systems (Owen 2005:2).

In October 2008, the Department of Ghardaia, 600km south of Algiers, was hit by heavy rains and dangerous floods such that rivers burst resulting in mudslides overrunning the local villages. The Boy Scouts who had attained numerous skills pertinent to emergency response took part in assisting the flood affected residents (Back et al 2009:26). Properties and lives were saved as a result. In 2006 children and adults in LiLoan and San Francisco villages in Philippines, were able to make use of the skills acquired from adjustments made during the period when DRR planning was done for unforeseen circumstances. They were in a position to leave the area sooner than when landslides enclosed their homes following three days of nonstop rain (Anderson 2010:10).

In Indonesia educational authorities designed resources that were used to teach more than 33 000 learners on the causes and effects of seismic activity, tsunamis as well as volcanic eruptions. The outcome of learners gaining an understanding of disasters was confirmed in May 2006 when an earthquake hit the Yogjakarta region. Even though 5 000 individuals died, the numbers were meant to be to a large extent elevated had the children not been equipped with the skills that enabled them to swiftly respond after the quake had hit the community had they not informed their parents of what to do. The families followed the given procedure and they had to hide under the table, in

doorframes as well as under beds as a safety measure and remained in their houses till the quake had ended and that led to their survival (Gajbhiye 2011:82).

Partho, a twelve-year-old boy from a village in Orrisa during the flood period recalled the concept related to disaster preparedness that were taught to them at school during one of the lessons and could save hundreds of citizens from getting injured or dying by making use of this understanding at the fitting time (Gajbhiye 2011:82; World Disaster Report 2007).

A seven-year-old Lamia from Bangladesh was able to save the lives of many people from the devastation of Cyclone Sidr in 2007. She had learnt about the soon approaching cyclone from her teacher and she and her friends notified members of the community. She was also aware of various procedures such as evacuating earlier to a safe shelter, moving livestock to a higher ground and keeping legal papers safe. This proved to be very helpful and successful when the cyclone hit their area (Actionaid s.a:4).

3.9 Progress in Disaster Risk Reduction teaching and learning

The Central Board of Secondary Education in India highlighted the importance of constant and comprehensive appraisal of students of class VIII. In addition to acquiring knowledge about the preparedness measures that would be essential for a variety of hazards the learners earned grades for their active involvement in mock drills, street plays, rallies, painting, debate and essay, poster as well as slogan writing competitions. For learners in class IX and X, the board made recommendations for assessments to be done in the subject of Social Science by both the school as well as external system. Internal evaluation would be limited to 20% of the entire assessment (Sharma & Dey s.a:9).

In the Philippines supervision of teaching of the DRR components in classrooms was undertaken in December 2007 and January 2008 by curriculum specialists from the Ministry of Education, National Disaster Management Office focus point project working group members and the school principals. The assessment resulted in changes being implemented in some of the lesson plans (ADPC 2008b:12).

The challenge posed by use of a range of methodologies to disseminate disaster management knowledge is to determine which methods are more effective in changing the behaviour of a specific target group of learners. A further challenge being to ensure that the advice provided by any programme and through the use of any of these methods is technically accurate. Unfortunately, many countries have implemented various methods and techniques through different initiatives to create awareness among their communities without actually validating their accuracy and effectiveness (Izadkhah & Hossein 2005:146). This then, makes it imperative to pursue the study to get a true reflection of whether the anticipated results are being achieved, that

is, to make all learners well prepared for any emergency likely to be encountered within the community.

3.10 Conclusion

Disaster events can be minimised when all the citizens are well aware of what to do, and when to it. There are a number of countries that have mainstreamed the disaster management principles and practices into the school curriculum with success, which goes to show that it is a process that when properly implemented the communities of which the learners are members might experience some benefits. The extent to which disaster management concepts are part of the curriculum varies from one country to another with special emphasis on the hazards that affect them most.

It has been noted that increasing the learners' capacity through disaster knowledge, skills as well as change in attitude towards disaster issues would result in them as well as other community members being less vulnerable to various hazards. Various techniques such as competitions, DRR clubs, peer education as well as street dramas, would help to ensure that the learners become involved in the sharing of DRR knowledge increasing the levels of awareness of the learners as well as the community at large. Where learners' views would need to be taken into account when family, community or district level decisions are being made pertaining to DRR gives them the confidence which is one of the qualities that would enable them to take a leading role in activities such as community participatory vulnerability analysis. Lack of educators with enough knowledge of disaster issues as well as lack of enough resources such as study materials within the school, could act as a hindrance to the proper implementation of the curriculum.

CHAPTER FOUR

Research Findings and Analysis

4.1 Introduction

This chapter focuses on the analysis of the life orientation curriculum as well as those of other learning areas with the intention of checking the extent to which the disaster management knowledge is being disseminated to the learners. The results of the interviews done with the principals, life orientation educators and focus group discussion, department of education official from the Amajuba district office, as well as the personnel from the Amajuba District Disaster Management Centre would be closely scrutinized with the aim of coming up with valid deductions pertaining to the contributions they are making in ensuring that disaster management concepts are covered within the curriculum. The analysis of the learners' questionnaires would encompass comparisons amongst the responses given per grade, to assess the changes taking place in terms of learners' progress. Comparison of responses amongst the schools would also be done to ascertain the extent of the role of the schools in disaster management. For the purpose of the analysis the participating schools would be named A, B, C and D. There are also instances where the analysis would be done on all the respondents as one group, such as when the disaster preparedness levels are being checked.

4.2 Socio-demographic data

4.2.1 Learner Gender

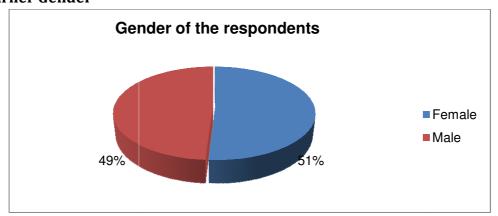


Figure 4. 1: Gender composition of the respondents

According to Figure 4.1, there were 120 learners of which 49% were boys and 61% were girls. The intention was to make use of 60 boys and 60 girls, but at one school more girls were used as there were fewer boys within the grade.

4.2.1.1 Age of the learner who participated

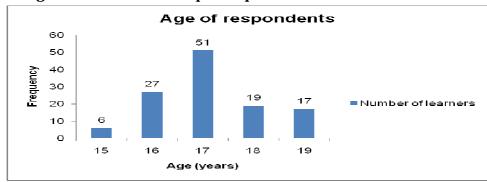


Figure 4. 2: Age of the learners who participated in the survey

Figure 4.2 above shows the normal type of distribution of the learners in terms of their age groups which ranges from 15 to 19 years. Fifty-one of the learners are 17 years old and it is the largest group, while the smallest group has six learners who are aged 15 years.

The respondents comprised of learners taken from four schools which are named A, B, C and D and within each school there were ten respondents per grade which amounted to 30 learners per school. In terms of numbers per grade there were 40 learners who participated in grade 10, 11 and 12 respectively.

4.3 Amajuba District disaster management personnel interview

The Amajuba District Disaster Management Centre (ADDMC) personnel outlined that they liaised with the Cooperate governance section within the Department of Education on issues of disaster management, especially in areas to be highly at risk. The relationship between the disaster management centre and schools was still in its early stages, for instance in September 2010 there was a workshop organised by the cooperative governance where the officials from the district disaster management centre were the facilitators. On one hand the personnel interviewed stated that some schools were able to send their educator representative and five learners to attend the workshop, and yet the educators indicated that they never took part in any workshops. Issues that were covered included the aspect of fire disasters, where learners were made aware of the causes of fire, what they had to do in the event of a fire starting as well as ways of preventing their homes from being destroyed by fires. Amajuba district is highly vulnerable to veld fires, hence the workshop could have been of great importance to all the learners and educators as they would have gained information that could help them make informed decisions within their communities by reducing their levels of susceptibility.

The official indicated that they had not made any visits to the schools and had not initiated any programmes for schools within the district. They did not offer assistance to educators in terms of disaster management education resources such as fliers, textbooks as well as charts outlining what the learners should do before and after the occurrence of a disaster. There had not been any

monitoring on whether the schools were doing anything at all to ensure that DRR was part and parcel of their day to day business.

The policy framework for disaster risk management in the Province of KwaZulu-Natal, stipulates that the disaster management centres are obliged to take an active part in ensuring that there are awareness programmes that are in place and to annually monitor their continuity (KZN Provincial Gazette 2010:133). The official admitted that they could be contributing hugely to learners' unpreparedness since they had not had a chance to assist them. However, to improve on this the official said that in future they planned to be more active in helping the schools with disaster management.

The ADDMC was not conducting any form of DRR competitions for learners as a way of increasing their knowledge, preparedness levels and participation in the community on issues of disaster management. Fiji and Sri Lanka are some of the countries previously discussed where the Disaster Management Centres were actively engaging learners in some DRR competitions. Learners' knowledge, attitude and behaviour could be greatly improved. Holding competitions could result in relations between schools and the ADDMC improving.

Most of the answers from the officials were negative indicating that they had not done many activities or programmes in raising awareness in schools or in promoting a culture of safety. For instance, they had not visited any schools to educate both the learners and educators on disaster preparedness and even to just offer assistance in terms of drills. The research showed that not much had been done by the disaster management centre in terms of strengthening its relationship with schools. That was, however, contrary to its agenda because it was supposed to be monitoring and evaluating the disaster preparedness in schools on an annual basis. Generally, it can be noted that there was still a lot of effort needed by the centre in terms of executing its duties and improving its activities in schools.

4.4 Principal interviews

4.4.1 Awareness of Disaster Management Act and policy framework

All the principals professed to be aware of the existence of the South African Disaster Management Act (South Africa 2002), while the principal of school D was not aware of the existence of the policy framework for Disaster Risk Management. For instance, the principal of school C indicated that he only got to know of the Act in February 2011 when he attended a workshop on disaster management. However, all the principals had not read through both the Act and the policy framework which meant that they were not in a position to take into account the objectives of the national government in relation to disaster management education. Hence, they did not take into account the recommendations of the policy when coordinating and monitoring the

day to day teaching and learning, which meant there was gap which needed to be filled. In a way the principals could be crippling the schools because of their silence on disaster management issues since they should be spearheading the process of school preparedness.

4.4.2 Hazards affecting the schools

Each of the principals indicated that their schools had at one time been affected by hazards. For instance the principal for school A mentioned an incident whereby the ceiling of a classroom fell in; the principal of school B said they had been affected by hail storms in 2009, snow in 2011 and those two incidents caused structural damages at the school, as well as bomb threat in 2010. The principals at School C and D mentioned that they had been affected by hail storms in 2009, there were structural damages whereby classroom windows and roofs were destroyed, and in addition to that at school D some of the educators' cars were badly damaged. The principals indicated that in those instances learners panicked, and there was a lot of commotion, which highlighted that there was a lack of awareness and preparedness. The district also experienced snow in 2011, and it affected all the schools. Most of the learners and educators were not able to go to school because some of the roads were cut off. All the schools did not have measures in place to cope with these given scenarios, thus teaching and learning was disrupted.

4.4.3 Workshops on disaster management for principals

Three of the four principals indicated that they had not attended any workshops at all on issues related to disaster management, while the principal of school C indicated that he had attended a workshop in February 2011 which was conducted by the provincial disaster management centre. He mentioned that issues which were discussed included; different kinds of hazards which could affect schools such as HIV/AIDS, flooding, fire on school grounds, contamination of food or water. The impacts of disasters on the education sector were also outlined. The disaster management process was discussed and hazard and vulnerability analysis done; prevention and mitigation, preparedness planning; prediction and warning as well as response and recovery were covered. The workshop was a success in disseminating information about disaster management principles and practices that needed to be covered in schools. The principal who attended the workshop said that it was very educative, beneficial and an eye-opener. He would advise other principals to attend in future. Moreover, he gave feedback of the workshop to the educators, school governing body and the learners and this helped in increasing interest in disaster management issues at the school.

In comparison with what happens in a country such as India where workshops are taken seriously and attendance is high, the Masakhane ward is falling short. A lot of effort needs to be put in by both parties, that is, the disaster management centre needs to hold more workshops and do follow ups in the schools, and then the principals need to attend and go back to their schools and

implement whatever they have learnt in their schools. Furthermore, the KZN Provincial Disaster management centre also has to assist and monitor the Amajuba local disaster management centre to ensure that it executes its duties.

4.4.4 Working with other organisations

Two of the principals indicated that their schools had not been visited by any external organisations who were tackling matters related to disaster management. The other two principals indicated that the health sector officials visited to discuss issues related to HIV & AIDS as well as TB. All the principals indicated that there was no relationship with the Amajuba District Disaster Management Centre whose officials had never visited any of the schools to do an inspection or to address learners. This then indicated that the institutions officials could not be properly capacitated if the people who had the ideal knowledge were not imparting the knowledge and appropriate skills.

4.4.5 School disaster management committee

Only the principal of school A indicated that they had a disaster management committee while the other three schools indicated that they had the school safety committee which covered some of the issues relevant to disaster management. The school disaster management committee for school A consisted of the principal who was the overseer as well as the educators who were the members. For those schools that had school safety committees, the principal was a member, while the other stakeholders were the school management team representative, learners' representatives, the security guard as well as the members of the School Governing Board. For all the schools the committee membership lacked representatives from the departments that dealt with disasters such as the ADMC, police and the fire services who had the expertise that could be used when formulating disaster management plans and in drills. Hence, the competence of the committees was questionable. The department of education representative could be used to monitor the committee activities.

Only School a held committee meetings once every year, while for school B it was in 2009 and schools C and D in year 2008. As all the school committees were not holding regular meetings throughout the school calendar year, there were no up to date and relevant programmes in place as part of the plans that could lead to high levels of learner preparedness.

4.4.6 School disaster management plans

The principals of B, C and D schools stated that they included some principles of disaster management in their school safety plan while school A had a school disaster management plan. The disaster management plan of school A encompassed disaster types, evacuation procedures to be followed, safety precautions that needed to be taken by both administrators, educators as well as the learners, first aid skills for educators and learners as well as the contacts for emergencies.

The school safety plans of school B, C and D did not cover vulnerability assessments and response activities such as mitigation of hazards. The plans for all the participating schools did not afford learners a chance to actively participate in their communities to enhance the culture of preparedness. All the schools did not have any special provisions to cater for the handicapped learners. Thus if there were any learners who were handicapped within the participating schools they were more susceptible to the effects of any hazard that had the potential of affecting their school.

School C safety plan encompassed safety rules. Within the rules, it was stated that fire extinguishers were supposed to be serviced every year to ensure that they were working properly although there were no fire extinguishers within the school. This shows that though the school had rules in place they were not strictly being followed because they should have ensured that there were fire extinguishers available. Emergency procedures for school C required that the principal would be the one to make sure that everyone would gather at the assembly since he was the highest authority at the school. Once learners had gathered at assembly point the educators would then mark the registers to check if there were any learners missing. Their designated assembly point was the school ground behind the office block. The plan, to a lesser extent, covered concepts of disaster management although they were not actually preparing the learners for the unexpected events. School B and D did not have anything that dealt with disaster management.

All schools had phone numbers and names of representatives of South African Police Services, Medical Services Emergency Medical Rescue Services, Social development department, fire department. They did not have a phone number of the Amajuba District Disaster Management Centre in order to contact it in case of an emergency. This was a clear indication that the school committees did not realise the significant role that could be played by the Amajuba Disaster Management Centre in cases of emergencies such as fire or floods.

The disaster management plans need to be communicated effectively. Everyone involved within the school system needs to know what is expected of them or the roles that they should play. The communication of the disaster management plans were not done effectively in all schools as all the schools did not have communication plans. In school C the belief was that the members would communicate with their fellows, while learners and parents were not aware of it except for the School Governing Board members. At school A, staff workshops were done where the plans were communicated to educators, while learner were informed in their classes by the educator responsible for them. At school B and D there was no communication with educators and learners at all the schools the parents were not informed hence, they did not have any knowledge of what the plans encompassed. That made it difficult for them to actively participate in disaster management issues without a clear guideline. Parents would need assurance that their children were going to be safe in the event of an emergency at school, and the best way for that would

have been to let them know the issues covered within the disaster management plans. That was contrary to what had been happening in countries such as Australia where channels of disseminating information such as, bulletin board notices, home newsletters and announcements at school assemblies were used and were effective in communicating to the school and community.

4.4.7 Principals' duties during an emergency

All the principals were able to identify at least one duty that they would be able to do during an emergency. For example the principals of schools A, B and C indicated that they would alert people in charge such as the police; the Amajuba District Education department officials and discuss with educators how the emergency event could be controlled, coordinating by designating educators. The principal of school D stated that he would summon educators and learners to the assembly. It was very important for principals to be involved since they were the leaders at the schools and it would inspire other members of staff to be involved during an emergency situation.

4.4.8 Practical drills within the past year

School A undertook drills for the whole school while for the other three schools drills were done in some clubs and some individual educator's lessons. That meant that not all learners had a chance to actively participate and it could make them more vulnerable if a hazard were to affect their homes or schools. Some schools were not making sure that every learner got a chance to participate in the drills, probably because the principals did not have a clear understanding of the Disaster Management Act and framework. Educators would not be able to practically assess the level of preparedness of their learners, without doing the drills. Consequently it also meant that learners who did not get a chance to be involved in those drill whilst at school, might end up not being prepared to deal with any hazard in the event that it affected their communities.

4.4.9 Equipment to use in case of an emergency

Schools A, B and D had fire extinguishers and first aid boxes whilst school C only had a first aid box. This indicates that school C could be less prepared to handle a fire emergency because they did not have the fire suppression equipment, and as a result the school was more vulnerable than the other schools. The South African Act (South Africa 1996) amendment on the regulations for safety measures at public schools in section 8F (2) Government Gazette (2006:9) stipulates that "A public school must take measures to (a) install fire extinguishers, which the principal must ensure are checked regularly and (b) fire alarms that are audible in all parts of the school premises, depending on the availability of funds." The principal of school C mentioned that the school did not have fire extinguishers due to lack of funds. This meant that educators at school C could not be able to coach learners on the proper ways of making use of the fire extinguishers. In all the schools there were no fire alarms in place which could detect fire or smoke. The principals said they only

had a siren, and could ring it repeatedly to alarm the learners and educators in terms of emergent incidents. Lack of smoke detectors within all the participating schools increased their susceptibility to fires.

4.4.10 Schools' reach out programme within their communities

All the schools had not conducted any reach out programme within their communities whereby the schools would take part in educating the community members about disaster preparedness through activities like plays and poems. Thus, schools were not playing their role of being disseminators of information and skills that would ensure that the communities would be aware and be well prepared for any disasters. Learners were not being afforded an opportunity to effectively learn so that in future they could lead the management of disasters within their communities. Thus the school curriculum has a minimal positive influence within the surrounding communities.

4.5 Life orientation educators interviews and focus group discussions

Three of the four life orientation educators interviewed indicated that they were not aware of the existence of the South African disaster management Act (South Africa 2002). Hence these educators would not be able to tackle issues on disaster management when they were not in the know of what was expected of them. The topics covering concepts on disaster management might not be given enough time within the curriculum as the educators would not appreciate its importance to the day to day life of the learners and the communities where they come from. There were also chances that some educators skipped teaching these topics, and the surrounding communities would be greatly disadvantaged as learners were usually the ones to pass on the learnt information.

4.5.1 Hazards that affect/ affected the local community

From the four life orientation educators interviewed, one stated that no hazards had affected their community or their school while three educators indicated that they had been affected at some point. For instance the educator from school B first indicated that it was ten years ago when people lost their livestock, and houses in rural areas of Mtwalume. The educator when further probed, managed to realise that hailstorms and snow were hazards as well and then outlined that they had been affected by hailstorms in 2009 which damaged some cars of the parents and educators who were in school attending a meeting, while the snow in July 2011 prevented learners from attending classes and some educators could not go to work. This was a clear indication that the educators did not have enough knowledge in relation to the definition of what a hazard was. This was the same educator who was supposed to educate learners about hazards and give examples of areas affected. Educator at school D indicated that floods, hailstorms, veld fires and HIV and AIDS had affected their communities. Educator from school C indicated that there were fire hazards where houses were burnt down as a result of illegal connections to electricity. This was a clear indication

that the area was susceptible to the impact of hazards to which, if learners were equipped with enough knowledge and skill, they would be able to help their communities deal with these hazards without people being injured or killed.

4.5.2 Emergency situation faced at school (work environment)

One educator indicated that there was a bomb threat in 2010 at school where the lessons were disrupted and everyone had to get to the school grounds, while three educators stated that their schools had not faced any emergency situation. During the bomb scare at school B, there was a learner moving from class to class stating that all the people should go to the grounds. The educator indicated that they were not prepared for the situation, and there was commotion as the educators and learners were wondering what was taking place. Learners moved haphazardly to the school grounds. There was poor communication because one person moved from one class to another and this could have increased the chances of the learners and educators being injured or killed in the event of the bomb having been there and blowing up. Had the school been well prepared for this, learners and educators would not have panicked, but move in an orderly manner to the designated assembly point. This evidence proves that schools from the Ward were prone to hazards just like schools that had been affected in other countries. Hence there is a need to educate learners.

4.5.3 Subjects where natural disasters are taught as part of the curriculum

Educators from school A and C indicated that life orientation, geography and Social Sciences were the subjects where natural disasters were taught while school B and D educators indicated that it was life orientation under the learning area making choices and environmental issues and in geography where they learn about volcanoes. The responses of all the educators were in line with the information within the South African curriculum statements. Although the educators had knowledge of where the natural disasters were taught, it might not translate into what was actually taking place within the classrooms as the geography educators were not directly interviewed for them to give a clear explanation.

4.5.4 Grade where disaster related concepts are taught

One educator indicated that disaster concepts were covered in grade 12, two educators indicated that they were covered in grade 10 and one educator indicated that they covered these concepts in grade 11. Respondents from school A indicated that they were covered in grade 10, 11, and 12. Only one I educator indicated that they taught life orientation at all FET grades and that indicated that issues of disaster management were not yet taken seriously as all learners needed to be constantly reminded of the importance of disaster preparedness by being given age appropriate

information. Hence the need to tackle the disaster management concepts in all the FET grades every year. This would help ensure that all learners were well equipped with the relevant knowledge.

4.5.5 Brief outline of concepts covered within life orientation

There were diverse responses from life orientation (LO) educators in terms of what they covered related to disaster management as shown in the table below.

Table 4. 1: Disaster-related concepts covered in life orientation

SCHOOL	CONCEPTS COVERED
А	Evacuation Drills
	Health hazards
В	Health Hazards
С	HIV/AIDS
D	 Environmental issues Pollution (Case study Oil Refineries) Flooding (Case study of urban areas) HIV/AIDS Case studies of effects, ways of prevention

Comparing the above-mentioned information with the curriculum requirements within South Africa, the educators are not doing justice to the Department as they are not covering all the concepts intended to be covered in the LO programme of study. For instance, educators in grade 12 were supposed to cover health hazards within the first term and from the above table only the educators from school A and B did that, and there were no chances of these educators covering the aspects after the interview as the discussions were done just a week before the students were due to start writing their senior certificate examinations, and they were no longer attending classes.

4.5.6 Participatory vulnerability assessment within Amajuba

Three of the educators indicated that their learners were not actively involved in participatory vulnerability assessment activities, and they showed a lack of an understanding of what was involved in participatory vulnerability analysis process. The educators from school D indicated that they participated when learners were studying the case studies where they were to identify the risks in the given scenario and find alternatives to managing those risks. For instance, when the learners were studying the case studies of floods that in the past affected some areas within the KwaZulu-Natal province, the learners were to identify the risks that were faced by people within the flooding area. Learners were also required to categorize properties as well as the people according to their vulnerability levels. Although learners were not actually getting to visit the area affected by the disaster, through the case study they were able to get the idea of how they were supposed to do the vulnerability assessment. For the schools where learners were not doing anything, they were disadvantaged as they could not look at issues and needs within their communities. Hence,

they would not be able to effect change or reduce vulnerability or improve resilience levels as was done by high school learners in Nepal who undertook the PVA.

4.5.7 Ensuring that learners were prepared for any disaster

Educators from school A stated that they conducted mock emergency evacuation drills while school B stated that lessons on disaster were given in class, fliers were circulated within the school, stage awareness programmes were done within specific days, and talk shows in the class. Educators from school D and C indicated that verbal discussions were done within the class, while no fire drills or evacuation exercises were done since the schools did not have relevant equipment. School D reported that evacuation drills were not done, but learners were told to use staircases in case of emergency and assemble downstairs after the sound of the siren. The educators admitted that they were not doing enough to instill the culture of preparedness in learners. It was previously noted that schools in other countries were doing additional activities to the main curriculum to ensure that learners were prepared, for instance in Sri Lanka there were disaster management clubs for learners, in Indonesia there were natural disaster preparedness games the Disaster Master, and disaster management competitions in Bangladesh.

4.5.8 Disasters management assessments

School B offered the learners assignments related to disaster management, while schools A, C and D were not giving learners assignments. The reasons for not giving the assignments were that they just followed the ones given to them from the Department of Education which did not directly require the learner to discuss disaster management. Where the assignments were given, the educator specified that they checked on whether learners knew the types of disasters that might occur and how to react or what steps to take when the particular disaster occurred. However, that was only done in grade 12.

All four life orientation educators and three of the four focus groups agreed that incorporating disaster management in the examinations would be a good thing. Learners tended to take for granted anything that they did where they did not earn a mark or which did not contribute towards their passing the specific grade, was a waste of time. One focus group was against the idea, stating that since the concept would be inclined to practical skills there would be no need for an examination to be written as learners would have to gain experience to know what would be important. One focus group from school A suggested that there could also be a practical assessment task where learners would earn marks by displaying their abilities to, for instance to use the fire suppression equipment properly.

Life Orientation educators from school B stated that self evaluation questionnaires were sometimes given to learners and those played an important part in evaluating the progress being made. Educators for school A, C and D stated that they did not have any way of assessing the progress

of the learners in relation to disaster management. The aspect of assessing disaster management knowledge and skills is something that the KZN department of education would need to make priority as highlighted in the central board of secondary education in India where learners earned grades for their active involvement.

The subject advisor for LO indicated that educators could at times decide to give learners assignments on issues that they were comfortable with. Hence, some learners were not exposed to do an assignment that tackled aspects on disaster management. Officials outlined that it was within the jurisdiction of the educator to invite officials such as the police; fire fighters as well as disaster managers to visit the school and have discussions with learners, that is, if the educator felt that could help in reaching the expected goal.

The subject advisor also indicated that educators complained of too much work hence, the lower number of assignments. Educators complained saying at times when they attended workshops organised by other departments such as health, they were given materials to hand over to learners such as essay competitions. Because of the fact that these competitions were not part of continuous assessment for the learners the educators were not administering them as they were increasing their workload.

4.5.9 Learners' competence in understanding disaster management issues

Educators from school A and B indicated that their learners understood a lot about these issues as they were aired on national television. While the educators from school D indicated that some of the learners were aware of the disasters, the problem was only that they did not know who to consult pertaining to questions they had as the educator claimed not being an expert. For learners with unanswered questions the personnel from the Amajuba Disaster Management Centre could either help answer the questions or organise experts who would visit the schools. School C educators stated that most of the learners did not have any interest at all. Lack of interest could be as a result of the way the issues were presented to the learners. Thus it would be crucial that the educators do thorough research and consultations to increase the learners' level of attention and interest.

4.5.10 Extracurricular activities related to disaster management

Three of the life orientation educators stated that they were not offering extracurricular activities, while the educator from School A indicated that they did mock drills at school A. Within school A learners were taught how to respond to a siren. Three short sirens meant that learners were supposed to hide under the desk, while one long siren indicated that learners were to move in a single file according to the route, to the grounds. The educators were then to mark the register on checking for any missing learners. Drills were done once in a calendar year at school A. Lack of drills in school B, C and D clearly showed that the schools were not imparting the skills that were to

help save lives in the near future in the event of a catastrophic event. Hence, the behaviour of these learners would not be changed in relation to issues such as being prepared to use fire suppression equipment like a fire extinguisher.

4.5.11 Ensuring that learners play an active role within the communities

Educators from school A stated that by teaching learners safety rules they would be actively involved in preventing disaster occurrences. School B educators stated that when it was holiday time learners were given tasks where they went and talked to people in their communities about disaster management. Learners from school B were also encouraged to render services towards the needy and elderly people, and they were encouraged to report back to the class. By so doing they were learning how to assist people who would be in need especially during an emergency situation. Educators of schools C and D failed to point out how they were ensuring that the learners could play an active role within their communities, and that could have a negative effect on their attitude and behaviour.

4.5.12 Resources used to impart knowledge on disaster management

A variety of sources were used by educators and their learners to ensure that the learners acquired disaster management knowledge. Educators at school A and C stated that they used textbooks. School B learners made use of the school computer centre for research on the Internet, library to get books to read more on disaster management. Electric plugs and exposed electric wires were used to make learners at school B aware of what they looked like so that in the event of them coming across the wires exposed in their communities, they would not touch them and they would report to the nearest adult. At school D, they made use of the textbooks as well as case studies from newspapers. The mentioned resources helped in increasing learners' knowledge and level of understanding of disaster management issues. Although resources might have led to some learners getting a better understanding, educators still needed to consult with the Amajuba Disaster Management centre where they could get fliers to distribute to learners that might increase their level of awareness on issues such as management of veld fires.

4.5.13 Educators' perceptions of available resources

All the life orientation educators stated that the available resources were not enough, for instance in school A they needed more books and models for illustrations, in School B they needed physical resources to use in training learners, for instance a dummy human body for first aid, the library books were outdated and the books they used in grade 12 did not cover much information on health hazards as it was very brief. The LO educator in school C indicated that they could not teach a learner to use a fire extinguisher when they did not have them within the school, as learners at times required a visual picture of what was being discussed. The LO educator from School D outlined the need for regular visits by the DoE and that the Amajuba District disaster

management centre was supposed to hold road shows and school visits to make learners aware of what to do in case of a disaster occurring.

Shortage of effective resources to ensure that all learners were well equipped for any disaster, for instance fire fighting equipment such as the fire extinguishers was lacking or if they were available they were not in working condition, which would be a problem. Educators at school C stated that they did not know what to do in the event of a fire happening at their school. In school C educators complained that due to lack of knowledge of the importance of fire extinguishers learners emptied all of them, making them useless. Human resources were there, but not skilled for such programmes. Relevant resources such as the first aid kits, fire extinguishers and oxygen cylinders should be provided so that the personnel could make use of them.

4.5.14 Educator preparedness

Educators specified the need for them to be well equipped with the right skills, then they would be prepared to impart the knowledge. Some outlined that they could impart skills on fire fighting. All the educators indicated that they were not formally equipped with skills to teach disaster management.

Educators indicated that life orientation educators in conjunction with other educators should be able to offer extracurricular activities if it was a planned process, and allotted time on the school calendar. For example during sports time or time for extracurricular activities within the school hours. One educator specified being ready to take up school safety activities especially fire fighting, but there was a need for basic equipment for fire fighting at school. It was outlined that maybe those who teach geography and HSS will be prepared because they were familiar with the themes.

Some sentiments were that educators were not prepared since disaster management was not part of the curriculum of teacher training education hence they had never been exposed to it, unless the department trained educators. They only got to know about disaster management from television or reading safety manuals. It was not every educator who bothered to read such guides. Thus not everyone had the knowledge. Some outlined that they were hearing about disaster risk reduction for the first time during the focus group discussion. They were not to teach disaster management unless it was within the syllabus and examinable. LO educators complained that they were not given sufficient guidance on the subject matter. They needed to be exposed to intensive workshops before reaching out to the learners. Educators were overloaded with work, that is, paper work, and number of learners. Educators indicated they were not prepared to take extracurricular activities. The educators' comments showed that not much was being done on their part towards the implementation of disaster management principles and practices.

Educators of School B, C and D indicated that they did not have a programme in place for educator development, while school A had a programme where educators were capacitated with skills that could help during an evacuation process. The chances of educators gaining skills and knowledge related to disaster management were minimal if the schools were not in a position to capacitate them. Hence, the educators were not well prepared.

4.5.15 External organisation significance in school disaster management

All life orientation educators and focus group participants indicated that the learners as well as educators would benefit as they would be getting information from people, from Fire Department and the Health Department who were actually involved in disaster management. Seeing and hearing information from people who dealt with such things could make learners see how serious the issue was resulting in a better understanding of disaster preparedness education. Then learners might end up studying the issues about fire fighting as a career. School D's life orientation educator indicated that health workers, namely nurses sometimes visited and addressed learners on HIV issues while in school A, B and C the responses were that there was no assistance offered by organisations such as the police and Amajuba Disaster Management Centre. Inviting experts from different fields would complement the educators' efforts and increase the learners' level of understanding. Educators' views showed that they felt the need to fill the gap regarding disaster management knowledge and skills and the right people to do that were those with the expertise.

4.5.16 Attendance of disaster management workshops

All the educators had not attended the workshops that could enable them to impart disaster management knowledge and skills to learners. That had a negative impact on the way they were tackling issues on disaster management as they lacked knowledge of the content to be covered. The learners' knowledge of disaster management would mostly be gained by interaction with the educator who had a better understanding of the disaster issues. The educators' performance could be enhanced by making sure that workshops were organised for them where disaster management issues were discussed. That was the case in other countries such as India and Costa Rica where educators were able to implement new ideas within their work stations after attending workshops.

4.5.17 Educator's attitude towards training

All the educators were of the opinion that training would help them. Training would enable them to know how to act before a disaster or during a disaster situation. Training allows educators to pass on the knowledge to learners on disaster management aspects. Life orientation and the Disaster Management Centre cannot be separated as the two works towards the same goal of eliminating the social challenges faced by the communities to prepare them. It will be an eye-opener for future life experiences.

Educators indicated that in-service training and induction courses could be helpful to educators and learners. For instance fire fighting training programmes or workshops could be offered by the fire fighting department of the local municipality on the school premises, for example a safety course regarding disaster management skills, disaster risk education and DM skills that could also be learnt by educators. The attitude of the educators indicated that most of them were willing to learn new things, especially in relation with disaster management as part of the curriculum and that could lead to a better way of knowledge and skills dissemination. Hence, the issue of educators' training requires urgent attention to ensure the continuous dissemination of helpful information that would save the communities from any catastrophic event.

4.5.18 Learners as potential knowledge disseminators

Educators stated that learners took the learnt information home to their parents, siblings, and grandparents. If something happened they would be able to help the neighbours. Neighbours talking, pass information. Some learners lost their loved ones due to disasters so they would definitely pass the message on to eliminate the chances of losing another family member to the same problem.

Educators who did not agree that the community would benefit, stated that no activities of the kind were taking place in the school. The schools were concentrating on improving results, and they did not care about what was happening outside the school premises. Disaster management issues might have been seen as irrelevant since they were not part of the examinations written by the learners at senior level. Unfortunately when learners were not empowered they would not be able to take action within their communities. Learners in other countries were able to disseminate knowledge through peer education, and that kind of activity was not in any of the four schools.

4.5.19 Involvement in mock drills at work

Educators of school B, C and D professed that they had never been exposed to any disaster drills within the working environment, while those from school A stated that they took part in the fire and evacuation drills where they were guiding the learners in the process, and participated by marking the register and searching for any missing children. For those who did not attend, the reasons were that of time constraints and some stated that it could have been due to the fact that not very serious disasters had been experienced in the district, so people tended to overlook the significance of these drills. Drills within a school are done with the assistance of educators. The responses, by educators at schools B, C and D indicated that drills were not being done as a programme for the whole school where every educator and learner would be expected to play a role. Educators would not be able to impart the skills such as the use of a fire extinguisher when they were not in a position to do a proper demonstration as they did not have the skills. Hence,

during teaching and learning they could deliberately avoid covering the disaster management concepts, and this would have a negative effect on the learners' knowledge, behaviour and attitude.

4.5.20 Educator's views on incorporating DRR into other subjects

The majority of educators' sentiments were that disaster management could be incorporated into other subjects as well, mainly because all subjects were preparing learners to face the outside world and life problems. So it could help them too. life sciences was given as an example, which has a component of environmental studies where learners could be taught about how human beings affect nature. They should be taught how to prevent disasters occurring by management of the environment. Learners would be able to analyse the dangers around them. Those who were against the idea, specified that if it included life skills, then it should remain a part of life orientation. The idea of incorporating DRR in other subjects was in line with what had been happening in other countries such as Myanmar where the information on disasters was part of life skills, general science, English and geography. More learners might be able to gain knowledge.

4.5.21 Ways to improve the level of understanding disaster importance

Educators and learners were part of the community as a whole hence, it was important for them to understand that DRR was part of their lives. Educators indicated that people trained for DRR should visit schools and address learners more often. Workshops were not supposed to be an event, but a process, for instance having them twice per term so that the educators get well prepared. Show statistics of disasters in the Amajuba community and other communities so that learners would have a better understanding of the consequences of catastrophic events such as flooding. Department of Education would need to introduce the subject as one of the compulsory learning areas on its own, where learners write an examination. The contributions made by the educators during the discussion could be a sign that there were some gaps that had to be filled to make sure that both the educators and learners could have the skills and knowledge to make them better prepared.

4.6 Amajuba Department of Education official (subject advisor)

4.6.1 Awareness of South African Disaster Management Act and policy framework

The official, showed ignorance of the existence of the South African disaster management Act No. 57 of 2002, as well as the policy framework for Disaster Management in South Africa. And outlined that they were not involved within the design of the curriculum but they were the implementers, although they make recommendations to the curriculum designers. This is an official who monitors the progress of the educators who teach LO. Lack of knowledge on the Act could have hindered

the subject advisor from emphasising to the educators the importance of teaching disaster management principles and practices. Hence, the reason for educator not being in the know of what is expected of them.

4.6.2 Hazard affecting schools

The official specified that there were schools within the Amajuba district that had been affected by hazards such as floods, gangsterism, drugs, faction fights, teenage pregnancies, water shortages, inadequate sanitation, heavy rains, and some schools were said to be still making use of borehole water. Some schools made use of pit latrines which were not cared for very well and that posed a health hazard to both the learners and the educators. That clearly pointed out that the high schools within the district could also be vulnerable to health hazards such as cholera. Increasing the learners' knowledge of hazards was important so that they could improve the hygienic conditions of their surroundings.

4.6.3 Educator preparedness to teach disaster knowledge

The department official stated that there was a problem as there was a shortage of qualified educators to teach life orientation. An educator who was a specialist in, for instance IsiZulu or Mathematics would be made to teach life orientation as he or she would be having fewer periods or they were underperforming within their area of speciality. That worsened the situation as those people did not have the necessary expertise and experience to deliver the curriculum content to the learners. The educators who had attended orientation workshops during the beginning of the year were at times found teaching a different subject the following term, hence the gained knowledge would not be put to use. The subject advisor had less time with the educators, for instance they met once a term. At times the advisor visited some educators within their respective schools, but that would not suffice since there was a wide spectrum of other concepts that were to be covered besides tackling Disaster Management. The other constraint was that the policy did not allow the educators to be removed from the class during times of teaching and learning, while the unions on the other hand were against the use of educators after normal school hours and this made it very hard to workshop them. Hence, it can be stated that there were no measures in place to ensure that the educators were capacitated enough for them to impart DRR knowledge to the learners.

4.6.4 Workshops for educators

Educators usually attended the workshop where the subject advisor unpacked the content to be covered by the educator each term. Hence, disasters as a minor component of the work to be covered within the term could at times not be covered in the workshops. Subject advisors were not aware of issues that were covered in workshops conducted by the SDSS. When SDSS invited

educators to attend workshops, attendance was usually poor due to educators feeling that they were not important if the subject advisor was not involved.

4.6.5 Schools preparedness to handle emergency events

The subject advisor indicated that some schools within the ward did not have the resources such as a first-aid kit and fire extinguishers while other schools had first aid, but there were no educators with the required skills to administer first aid. This made it impossible for the educators to teach the learners the skills, and to administer first aid in case of an emergency.

4.6.6 Disaster management content coverage

The subject advisor specified that the reason why educators, at times, failed to cover more concepts on disaster knowledge was that the life orientation subject was offered two hours per week, of which one hour was reserved for physical education and one hour was for content coverage. Within that hour the educator was expected to cover more content of different aspects. As for the disaster drills they were not specifically undertaken under life orientation as they were supposed to be part of the extracurricular activities. Therefore where the school management teams failed to make plans for these drills, the school usually failed to do them.

4.7 Learners' questionnaires

4.7.1 Learners' knowledge

4.7.1.1 Hazards known to the learners

All the grade 10 learners indicated that they had knowledge of what a hazard was. In grade 11, 95% of the learners knew what a hazard was and indicated by the five per cent of learners said no to the given question. Of the grade 12 learners (80%) had knowledge of hazards while 20% indicated that they lacked knowledge of the hazards. That could be an indication that although, there was a topic in life orientation, a subject done by all grade 12 learners where they were supposed to be taught about health hazards, some educators could have actually skipped the topic. It might be a deliberate thing done by the educators as they were not prepared to teach these concepts. Hence, these learners lost out on very important issues. They were to leave school without being prepared for the hazards faced within the community. The disparity indicates that more needs to be done to ensure that all learners get knowledge about hazards.

The data in Table 4.2 below shows, comparatively, the number of learners per grade in the four schools who indicated that they knew about specific hazards, and those whose communities were affected by these hazards.

Table 4. 2: Hazards Knowledge of learners

		FLOOD		SNOW		DROUGH T		TROPICAL CYCLONE		TSUNAMI		HIV		FIRE		OTHERs		
			A	В	A	В	Α	В	A	В	A	В	Α	В	Α	В	A	В
		G 10	10	1	10	9	5	0	6	0	8	0	7	7	8	7	0	0
		G 11	10	3	10	10	7	0	4	0	10	0	8	7	6	1	1	0
	Α	G 12	10	0	10	10	7	0	6	0	10	0	6	6	9	4	4	1
		TOTAL	30	4	30	29	19	0	16	0	28	0	21	20	23	12	5	1
		%	100	13.3	100	96.7	63.3	0	53.3	0	93.3	0	70	66.7	76.6	40	16.7	3.3
		G 10	7	3	10	8	8	1	2	0	10	0	8	6	7	7	1	1
		G 11	9	5	6	6	5	0	4	1	7	0	7	7	4	3	0	0
SCHOOLS	В	G 12	10	5	5	5	9	0	8	4	5	0	8	7	8	7	3	1
		TOTAL	26	13	21	19	22	1	14	5	22	0	23	20	19	17	4	2
		%	86.6	43.3	70	63.3	73.3	3.3	46.6	16.7	73.3	0	76.7	66.6	63.3	56.7	13.3	6.7
SCH		G 10	7	3	3	3	5	3	0	0	4	2	3	3	8	8	0	0
•		G 11	5	4	0	0	5	0	0	0	0	0	0	0	0	0	0	0
	С	G 12	8	5	2	2	8	0	2	2	3	0	4	4	5	5	0	0
		TOTAL	20	12	5	5	18	3	2	2	7	2	7	7	13	13	0	0
		%	66.6	40	16.7	16.7	60	10	6.67	6.67	23.3	6.67	23.3	23.3	43.3	43.3	0	0
		G 10	6	5	9	6	6	3	0	0	4	0	10	8	5	5	0	0
		G 11	8	2	0	0	5	0	0	0	1	1	9	9	4	4	1	1
	D	G 12	10	4	3	2	1	0	0	0	6	5	10	9	4	4	1	0
		TOTAL	24	11	12	8	12	3	0	0	11	6	29	26	13	13	2	1
		%	80	36.7	40	26.7	40	10	0	0	36.7	20	96.7	86.6	43.3	43.3	6.7	3.3

Key The number of learners who said they had knowledge of the hazard

The number of learners who said their area was affected by that hazard

In all the grades, flood was a hazard that was best known; school A (100%), B (86.7%), C (66.7) and D (80%). These high figures could be attributed to the fact that the Amajuba District had been affected on numerous occasion by floods, for instance in January 2011 it was declared a disaster area. As for snow, 100% of the learners of school A knew about it, 70% of school B, 16.7% of C and 40% of school D. It was expected that most learners would be able to identify snow as a hazard as it affected the district in July 2011, and in most schools learners could not go to school.

The variation could be due to the fact that learners would not have been taught about this hazard or they would not have been given a proper definition of a hazard that would enable them to correctly identify and classify it. Of the listed hazards, tropical cyclones had the lowest responses per school. For school A, B, C and D the percentages were 53.3%, 46.7%, 6.7% and 0% respectively. This could be due to the fact that the learners had not been exposed to the class or their communities had not been affected by them. For other hazards school A, B, C and D the percentages were 16.7%, 13.3%, 0% and 6.7% respectively. Comparatively more learners at school A indicated that they were aware of other kinds of hazards, and that could be due to the fact that learners had gained more general knowledge.

There was a variation in the responses in terms of communities being affected that were given by the learner and that could be attributed to the fact that those learners lived in different communities which at times, would be affected differently by the hazards depending on their level of vulnerability. The most prominent hazards mentioned by the learners were floods, snow, HIV and fire which happened to be the hazards indicated by the Amajuba District Municipality to having affected the communities. It indicated that the learners knew what was affecting their respective communities.

4.7.1.2 Source of hazard knowledge

The school was identified by most learners in all the schools as the source of knowledge on hazards, followed by television and radio, then Internet and lastly the community meeting. These low percentages could be due to the fact that fewer learners were attending community meetings related to disaster management or their communities were not actively involved in disaster management. There were very few respondents who indicated that there were other sources of information regarding hazards. The identified sources were magazines and family discussions.

4.7.1.3 Subjects where learners acquired knowledge of hazards

A variety of subjects learnt at school had been identified as having helped the learners to know about hazards, namely life orientation, life sciences, physical sciences, geography, tourism, English as well as isiZulu. Of these subjects life orientation and geography dominated in all the grades. Some of the learners identified more than one subject, for instance life orientation, life sciences and geography as the sources of their knowledge of hazards. IsiZulu was identified as a source of knowledge by learners in grade 10 only. In English and isiZulu the educators explained that the learners were given a comprehension where the community had been affected by the hazard and they would answer questions in relation to the given story. Table 4.3 indicates the learners' responses as a percentage of the learners per grade in relation to the subjects that helped them gain knowledge on the hazards.

Table 4. 3: Subjects in which hazards have been taught

SUBJECT	GRADE 10 (%)	GRADE 11 (%)	GRADE 12 (%)
Life orientation	15	5	13
Life sciences	10	5	0
Physical sciences	3	3	2
Geography	20	50	23
English	0	0	2
Tourism	10	0	0
Life orientation, & life sciences	5	5	5
Life sciences, geography & tourism	3	0	0
Life orientation, life sciences & geography	8	2	5
Life orientation & geography	3	10	23
Life orientation & other subjects	3	0	0
Life sciences & physical sciences	3	0	5
Life sciences & geography	0	10	10
Life orientation, life sciences & English	0	2	0
Geography & Tourism	8	2	2
Life sciences & other subjects	0	0	2
Physical Sciences & geography	0	0	3
Life orientation, life sciences & Physical Sciences	3	0	2
Life orientation, life sciences, geography & isiZulu	3	0	0
Life sciences, geography & English	0	0	3
Life orientation, life sciences, Physical Sciences & English	3	0	0
Life orientation, life sciences, geography & English	0	3	0
Life orientation & English	0	3	0

Table 4.3 clearly indicates that the schools are playing an active part in disseminating the knowledge on hazards to the learners. Hazard knowledge gained would have a positive effect on the learners' lives. This has been the case in other countries where within the curriculum, disaster concepts were covered in more than one subject.

4.7.1.4 Learner notification of an emergency

In all the schools, the main device used to notify the learners of an emergency was the siren. In some schools they made use of both the siren and the bell when there was no electricity. One school had an intercom, and learners would hear the message from the speakers within their class. The learners' responses were at par with what had been said by their principals. The principals at schools A, B, C and D indicated the different ways in which the siren was rung, which would be an indication to the learner of the response required. At school C the principal said the bell would be rung continuously, while at school A the siren would wail continuously. The responses indicated that all the schools were well covered regarding this part of preparedness.

4.7.1.5 Knowledge of presence and ability to use fire extinguishers

Table 4. 4: Learners with knowledge of fire extinguisher availability and ability to use them

School	Awareness fire extinguisher availability	Ability to use the fire extinguisher
Α	93.3%	20%
В	93.3%	23.3%
С	73.3%	13.3%
D	70%	10%

Table 4.4 shows the percentages of learners who asserted that they were aware of the existence of fire extinguishers and those who were able to use them. Comparing the data in the table to information from the interviews, school C does not have fire extinguishers according to the educators and the principal of the institution. Hence the expected results would have been for all the learners to state that there were no fire extinguishers. This discrepancy showed that either the learners lacked knowledge of what a fire extinguisher was or they were not observant. Obviously, if they had been exposed to the fire extinguisher before they could rightfully give a correct answer.

In relation to the knowledge of how to use the fire extinguisher those who acknowledged that they could use it, were not able to say how to use it. Although some learners from all the four school indicated that they could use the fire extinguisher they could not specify the correct basic procedure. This clearly indicated that proper fire drills recommended by the Department of Education were not being carried out at schools. The South African Schools Act No. 84 of 1996 amendment for safety measures at public schools section 8F (2) (3) in the Government Gazette (2006:10) outlines that "The principal must ensure that staff members and, where applicable, learners who are in grade 8 or higher are trained to use the fire extinguishers". As the Amajuba District has a very high risk of veld fires, this scenario would make it more appropriate for schools to instil the skills of using the fire extinguisher, but the given results indicated that the schools were not taking the lead.

4.7.2 Learners' attitudes

4.7.2.1 Comparison of responses on disaster preparedness plans

Table 4. 5: Percentage of learners acknowledging the availability of disaster preparedness plans

School	Class Plan	Family Plan	Community Plan			
Α	90	90	33.3			
В	6.6	16.7	13.3			
С	16.7	13.3	23.3			
D	10	10	10			

School A had more learners who indicated that they had a class disaster preparedness plan. At schools A, B, C and D the percentages were 90%, 6.6%, 16.7% and 10% respectively. The responses from the learners in school A corresponded with information given by their principal and the educators who acknowledged the availability of the plans in each class. As for school B, C and D the principals and educators indicated that they did not have the plans and the high percentages of learners were indicative of the fact.

Regarding the availability of family preparedness plans, at schools A, B, C and D the percentages were 90%, 16.7%, 13.3% and 10% respectively. The results indicated that the learners of school B, C and D were not well equipped to facilitate or lead their families in designing family plans. There had not been a large change in behaviour in terms of increasing awareness within the family regarding the importance of disaster preparedness plans.

Regarding the availability of disaster preparedness plans, in the community the results indicated that the communities were not prepared or that the learners were not actively involved in community activities when in actual fact the plans could be available.

4.7.2.2 Evacuation route plan and rules

Figure 4.9 shows that for schools A, B, C and D the percentage of respondents who acknowledged the availability of evacuation plans were 93%, 10%, 18% and 18% correspondingly. All the schools were supposed to have the evacuation plans as part of the response plan section within the disaster management plans. The plans were supposed to be known by all the learners and it was not the case as indicated in Figure 4.9. These results were in line with the responses from the principals and educators who indicated that school B, C and D did not have the procedures in place while school A had the plans. For the schools without the plans the principals were not following the recommendations of the Department of Education on safety issues. The amendments of regulations in safety measures at public schools section 8F (1) in the Government Gazette (2006:9) pointed out that "A public school must ensure that (a) it establishes emergency evacuation procedures, (b) the emergency evacuation procedures are displayed in all offices, classrooms and amenities"

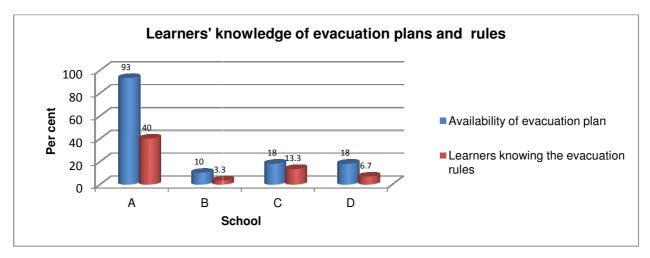


Figure 4. 3: Availability of evacuation route plan and knowledge of rules

School A had more learners who knew the building evacuation rules followed by School C then School D and lastly School B. For each school there were fewer learners who knew the rules of evacuation compared to those who did not know. It could have been due to the fact that they were not taught about them or they had not done any practical evacuation drills.

4.7.2.3 Learners' perception of responding to an emergency

Figure 4.4 showed the perception of learners in relation to responding to disaster situations happening at home, within their community and at school. At school A, B C and D the percentages of learners who indicated they were taught how to respond to a disaster situation were 100%, 27%, 37% and 33%. All the learners at school A were able to indicate that they were to stop any activities and move towards the assembly point, and the responses concurred with the L.O educator's explanation. Most learners from school B, C and D could not give clear responses on what they had been taught as most of them wrote they would call the Fire Department. This was an indication that drills were not being done at these schools and this point could be supported by the graphs for responding at school where some learners indicated that they could not respond if a disaster were to happen at school.

At school B, C and D the percentage of learners who could respond at home was higher than those who could respond at school. This could be attributed to the fact that they felt that they had not been capacitated at school. Probably at home they had discussed things to do as disaster preparedness.

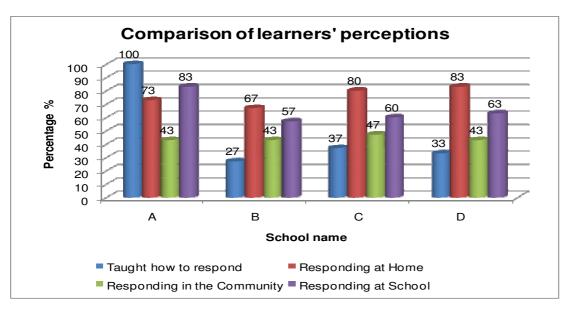


Figure 4. 4: Respondents' attitude towards responding to an emergency

At all schools less than 50% of the respondents indicated that they could respond within their communities. This indicated that the necessity of enabling the learners to make a positive contribution within their communities, especially when faced with a disastrous situation. However, the behaviour of most of these learners had not been changed in relation to reacting to a catastrophic event.

4.7.2.4 Learners' knowledge of emergency services numbers

Table 4.6 on the next page shows the percentages of learners of schools A, B, C and D who knew the emergency service providers' telephone numbers. Comparatively more learners in each grade per school knew the police numbers, followed by the ambulance services then fire department, Amajuba Disaster Management Centre and a few knew other phone numbers. Comparatively at school level, more learners at school A knew these numbers, followed by school B, C and lastly school D. The trend could be an indication that the schools A and B had a bigger input in letting the learners know about these numbers. Few learners knew the ADMC numbers, for instance in school A and B there were 26.7% and 10% respectively who knew them while at school C and D no learner knew them. Educators at school C and D were ignorant of the existence of the ADMC, hence they were not able to inform their learners. The learners identified doctors' numbers as well as Child Line. The other emergency services providers' numbers they knew.

Table 4. 6: Percentage of learners who knew the emergency service providers' numbers

			POLICE		AMBULANCE		FIRE DEPARTMENT		AMAJUBA DMC		OTHERS	
			YES	NO	YES	NO	YES	NO	YES	NO	YES	NO
	Α	grade 10	10	0	10	0	7	3	2	8	2	8
		grade 11	10	0	10	0	5	5	1	9	3	7
		grade 12	10	0	10	0	8	2	5	5	2	8
		TOTAL	30	0	30	0	20	10	8	22	7	23
		PER CENT (%)	100	0	100	0	66.7	33.3	26.7	73.3	23.3	76.7
	В	grade 10	10	0	10	0	4	6	0	10	0	10
		grade 11	10	0	9	1	3	7	1	9	0	10
		grade 12	10	0	10	0	6	4	2	8	2	8
νį		TOTAL	30	0	29	1	13	17	3	27	2	38
sсноогs		PER CENT (%)	100	0	96.7	3.3	43.3	56.7	10	90	6.7	93.3
품	С	grade 10	10	0	10	0	3	7	0	10	0	10
Š		grade 11	10	0	8	2	5	5	0	10	0	10
		grade 12	10	0	9	1	6	4	0	10	0	10
		TOTAL	30	0	27	3	14	16	0	30	0	30
		PER CENT (%)	100	0	90	10	46.7	53.3	0	100	0	100
	D	grade 10	9	1	9	1	0	10	0	10	0	10
		grade 11	8	2	8	2	2	8	0	10	0	10
		grade 12	9	1	9	1	4	6	0	10	0	10
		TOTAL	26	4	26	4	6	24	0	30	0	30
		PER CENT (%)	86.7	13.3	86.7	13.3	20	80	0	100	0	100

4.7.2.5 Sources of emergency numbers

Of the learners, 66.7% from the four schools indicated that their source of emergency service providers' numbers was the school, while 20% indicated the directory as the source and 10% indicated the television magazines and the radio. A few (3.3%) indicated that they had some discussions with personnel from the department of fire, ambulance and fire services. A larger number of the learners indicated that the school was the main source which goes to show that the educators are playing a part in increasing learners' awareness.

4.7.2.6 Learners' capability to offer assistance

Figure 4.5 indicates that at schools A and B all the learners outlined that they could offer some form of assistance, while at school C and D there were 50% and 63% respectively who were not able to offer assistance from all three grades that participated. A lot would need to be done in school C and D to increase the learners' level of preparedness to assist, especially in their families and communities as learners are considered sources of knowledge and skills.

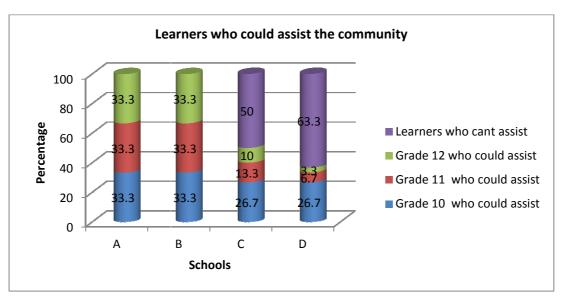


Figure 4. 5: Respondent's ability to assist the community

The learners identified a number of activities that they could do during the disaster. Some learners identified other activities in addition to the ones that were listed on the questionnaire. For instance those who identified other activities, they stated that they would help evacuate people from danger, give them a place to stay, offer first aid assistance.

Of those who indicated that they would inform Amajuba DMC in school A, B, C and D are 20%, 3.3%, 6.7% and 10% correspondingly. The low percentages are an indication that the Amajuba DMC had not visited the schools to make the learners aware of the services offered by the centre. Those who would carry property are 50%, 20%, 33% and 10% for school A, B, C and D. By carrying the property the learners would lessen the chances of economic losses at both family and community level. For those who indicated that they would inform the community members how to respond were 90%, 50%, 3.3% and 30% for school A, B, C and D respectively. Informing the community members how they should react is a measure that would assist in lessening the number of people who were injured or died. There had been instances where learners helped in minimizing the casualties by instructing people to take specific actions such as moving off the beach before it was hit by a tsunami.

4.7.2.7 Importance of disaster education when a disaster strikes

Disaster management knowledge can be said to be important in the day to day life of human beings as it contributes towards increasing their disaster preparedness levels. For instance Figure 4.6 below points out that 100%, 56.7%, 53.3% and 46.7% of learners at school A, B, C and D strongly agreed, while 40%, 26.7% and 36.6% at school B, C and D agreed to that notion. There were learners who were not sure of the importance of disaster knowledge, that is, 3.3%, 20% and 16.7%, for school B, C and D correspondingly. There were no learners who disagreed or strongly disagreed. This proved that the learners were aware of the significance of learning about disasters as it could reduce their chances of being impacted by different kinds of hazards.

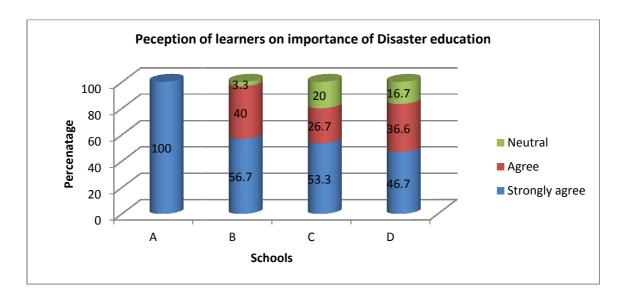


Figure 4. 6: Perception of learners on disaster education

4.7.2.8 Learners' perceptions of high school curriculum

According to some learners at school C and D only geography teaches about disasters. Therefore they suggested that the school should create other programmes to help every student know what to do, and this could be done by having afternoon classes. Learners from school B suggested that besides the seven compulsory subjects they were doing there could be an additional one specifically tackling disaster management related concepts. Learners indicated that they could be taught at least one safety tip per period, and the schools could organise people to teach about disaster management. Learners also pointed out that educators should use every chance they had to disseminate information especially about disasters and their effects, offer books/pamphlets on natural disasters and how to react. Pamphlets could be used for learners to gain more knowledge. Learners suggested that they could be given posters about places that had been impacted by disasters; place posters all over the school and inside the classrooms. The views of the learners in a way indicated that not much was being done at school to equip the learners with rightful skills and information.

Learners from school A outlined the need for more access to books, videos, magazine as well as Internet so that all the learners could have access to information that complement what they would have been taught in class. Learners at school A also suggested that school tours could be organised where learners were placed in situations which involved their use of skills in handling the real disaster situation. One learner indicated that they could help the fire department when they were working on a real fire incident. Some learners from all the schools recommended that they could get more information if they were given assignments where they investigated a disaster. The perceptions of the learners clearly indicated that they required practicable examples and procedures regarding disaster management, and it was not being offered at the schools.

Learners suggested that educators could contact the Disaster Management Centre or Fire Department to get people who were more experienced about disaster management to offer their knowledge to learners and educators, especially during assemblies. They advocated for some free periods so that they could discuss it with these people. Assemblies were noted to having been used as a useful tool in other countries where disaster management information and skills were taught to a large group of learner at the same time. This was not the case in the schools that participated in the survey. Learners were anxious to get new information – the educators and the school management were actually letting them down.

4.7.2.9 Sources of information for disaster preparedness

Figure 4.7 below shows that there was a variety of sources of information that could make it possible for learners to be well prepared for any disaster situation. The largest number of learners (71%) stated that the school could prepare them, followed by newspapers at 68%, personal experience at 31%, community meetings at 14% and lastly other sources at 13%.

Other sources of information indicated were family members, magazine articles, friends, cell phones, Internet, television, radio, library, church gatherings, and news on television. Of the learners 29% indicated that they did not get information from the school. This shows that there was a need for an improvement in information dissemination within the schools so that if they had documents related to DRR, all learners could access it without any difficulty.

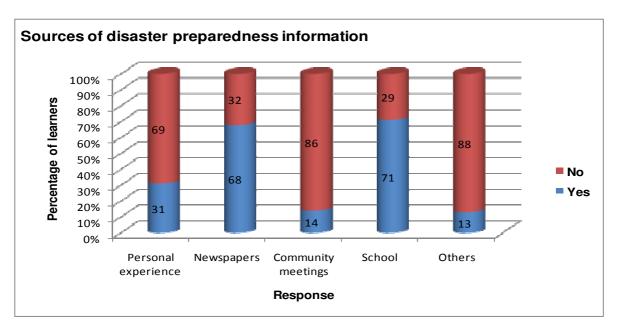


Figure 4. 7: Sources of Disaster Preparedness information

Fourteen per cent of all the learners indicated community meetings as a source of information. That was a very small figure and might be attributed to the fact that either most learners were not attending these meetings due to lack of knowledge of their importance or that within the community meeting very little was being said that could help them be prepared. Hence there would be need

for the educators to advocate for learners' active involvement in the community activities such as meetings organised by the various stakeholders with an interest in their well-being such as the department of Cooperative Governance and Traditional Affairs.

Of the learners, 68% stated that the newspapers helped them with information while the other 32% disagreed. This could be as a result of the fact that they did not have easy access to these newspapers as it was noted that some learners came from poor families who would not be able to afford a newspaper. They could be ignorant of the part that the paper covered issues that had an impact on their daily lives. Personal experiences were indicated by 31% of the learners as the source of preparedness information. This showed that some of the learners had learnt coping mechanisms regarding certain hazards such as veld fires and floods after having been affected by them within their communities or at home as a family.

4.7.3 Learners' behaviour

4.7.3.1 Attendance of drills at school

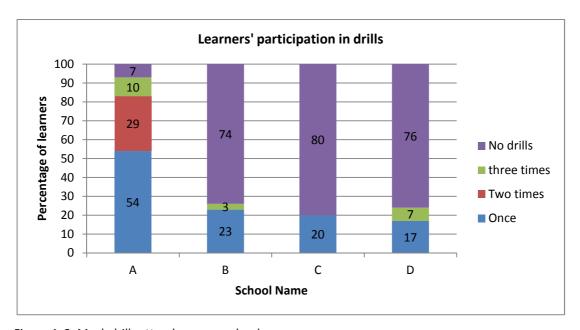


Figure 4. 8: Mock drills attendance per school

Figure 4.8 compares the learner participation in drills per school to show the clear picture of what was actually taking place in each of the participating schools. In school A, 54% of the learners participated in the mock drills once during the year, while 23% participated twice, 10% participated three times a year and seven per cent did not indicate any participation in any drills.

The learners (23%) at school B participated in drills once, three per cent participated twice and 74% had not taken part in any drills done during the year 2011. At school C, 20% of the learners attended the drills once during the year 2011, while 80% indicated that they did not attend any

drills. In School D, 17% participated once, while seven per cent participated twice and 76% did not take part in the mock drills.

The overall percentages of learners who attended drills at schools A, B, C and D were 93%, 27%, 20% and 20% respectively. As the graph indicates, school A had a higher percentage of attendance, while at the other three schools the percentages were comparatively very low. In the event that a hazard such as fire was to affect schools while learners were within the premises there were the chances that there could be more casualties within school B, C and D as the learners would be caught off guard.

Learners' participation in different mock drills 70 60 Percentage of learners 50 40 School A School B 30 23 23 School C 20 School D o 10 10 3 3 вз 0 0 0 0 o Flood Fire First Aid Classroom Other drills Type of drill

4.7.3.2 Participation in different kinds of mock drills

Figure 4. 9: Types of drills learners participated in per school

Figure 4.9 makes a comparison of learners' participation in different types of mock drills. For flood drills, it can be noted that school A, B, C and D had three per cent, three per cent , seven per cent and ten per cent learner participation respectively. Although the area is at risk of floods, the percentages of learners who participated in flood drills per school are very low.

School A, B, C and D have 70 per cent, 7 per cent, 3 per cent and 3 per cent participation by learners on fire drills respectively. School A would be at a relative advantage in the event of a fire occurrence as the greater number of learners would be well prepared. Fire is one of the hazards that have also been identified to affect Amajuba district greatly, which would mean that all the learners were supposed to be well prepared.

First aid participation statistics are 23%, 23%, 7% and 17% for schools A, B, C and D. These values indicate that most learners would not be able to offer any assistance to anyone who would have been injured during an emergency event.

Class evacuation statistics for school A, B C and D were 70%, ten per cent seven per cent and ten per cent respectively. These values indicate that the learners at school A will be able to leave the

class and go to the assembly point without encountering any problems. There were no evacuations that were actually done at school B, C and D as indicated by the educators. Hence, those learners, who indicated that they participated in drills, could have done them at primary school or they could have previously attended schooling at other institutions where the drill would have been performed.

4.7.3.3 Sharing learnt disaster preparedness information

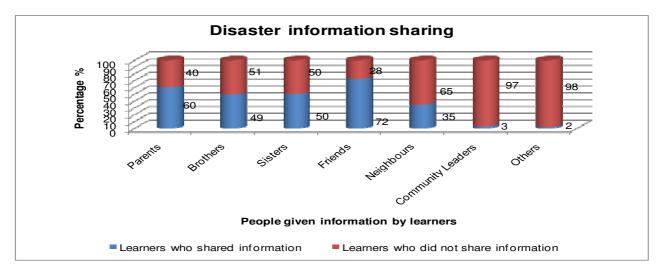


Figure 4. 10: Learners sharing information with other people

Figure 4.10 above shows that the largest number of learners indicated that they shared the information with their friends, that is, 72%. This could be due to the fact that they spend most of their time with their friends. Of them 60% indicated that they shared the information with their parents, 49% with brothers, and 50% with their sisters. These statistics indicates the impact that learning about disaster management can have on the learners' families. When the learner shared the information with family members that could result in the family being well prepared making the necessary changes that would reduce their vulnerability levels.

Thirty-five per cent managed to share the information with their neighbours, while three per cent shared with the community leaders. The decrease in the percentage of learners, who had shared information with other people besides their family and friends, showed that the learners were not actively involved in the community activities. This could be attributed to the fact that within the schools there was no culture of actively involving learners in community projects, therefore learners' inability to individually reach out to the community members.

Overall 81% of the learners indicated that they had shared the information they learnt at school with some people which indicated the importance of the school in disseminating disaster

preparedness information to the learners' families and the communities they reside in. Of the respondents, 19% indicated that they did not share the information learnt with anyone. This number could be attributed to the fact that some learners had not acquired any disaster preparedness information making it impossible for them to have anything to share with their families and the community members

4.8 Conclusion

The knowledge content in terms of being able to identify the hazards was well covered within the schools. Learners who did not do geography and life sciences as part of their subject combination will not be able to grasp those aspects covered in these subjects. There was necessary to ensure that these concepts were covered in life orientation as well so that all learners were to benefit. Lack of class disaster preparedness plans, evacuation route plans as well as not participating in drills such as class evacuation and fire drills would make the learners of school B, C and D to be more vulnerable to the hazards when they affected their school, home or community at large.

Hence, to a large extent the behaviour of the learners was not changed as they had not learnt the life skills that could enable them to save their lives and those of other people. The learners would have little to share with their families and the communities where they resided, in relation with DRR skills. Most of the schools were not playing their part in ensuring that the disaster management principles and practices were followed. Lack of visits to schools by the disaster management personnel could be the reason why the schools were not actively taking part in some of the programmes. When there was monitoring, the principals and educators would try to include these awareness programmes in their yearly plans. Educators and principals would have to attend workshops or be trained to implement the DRR principles and practices effectively.

CHAPTER FIVE

Recommendations and Conclusion

5.1. Introduction

In these modern days schools and especially children play an important part in the development of a lifestyle of prevention. Young people, particularly the present generation, find it considerably easy to learn because of the advance in technology and there are various sources of information, for instance the Internet. They can then pass on the knowledge they gain to their families, bringing a positive input in their communities.

Children should be inspired and edged on by their parents and educators to be directly involved and taking part in constructive programme in order to make the world a better place for everyone and even for the generations to come (Izadkhah & Hossein 2005:141). However, the culture of prevention will not happen overnight, it is a gradual process that requires patience. Moreover there is need for behavioural and belief changes from the philosophical approach towards disasters to an attitude whereby pupils are ready to learn and acquire knowledge about disasters. This frame of mind is best developed and nurtured at a tender age (Fitzgerald 2001:1). It is therefore the responsibility of the school to make sure that the knowledge they impart also include information about hazards and different measures or actions that can be taken to reduce the effects of the hazards (Petal 2008:21).

School disaster management should entail the usual set of steps found in all project management:

- Considering hazards, vulnerabilities, capacities and resources
- Mapping and putting into practice physical risk reduction
- Safeguarding of safe amenities
- Standard operating procedures and guidance for disaster response
- Test mitigation and awareness strategies and skills regularly, with realistic simulation drills
- Modifying the arrangements on the basis of past occurrence.

School disaster management reflects individual and family disaster prevention and community disaster prevention attempts as a whole (IFC2 s.a:3). This chapter gives a brief summary of the study results, draws a conclusion, and then outlines the recommendations being made to the different stakeholders involved in ensuring that the school system leads to the learners having the capacity to deal with a disaster occurrence under any given situation.

5.2. Summary of findings

The learners have gained knowledge to be able to identify the different kinds of hazards that affected or are currently affecting their communities, but most of them do not have the necessary skills that would help to curb the chances of their communities being affected by hazards. Drills were not being done in three of the four responding schools, hence learners would not be able to display any behavioural changes which can minimise the chances of them being injured or dying when a disaster occurs. The attitude of the learners towards disaster management education shows that not much is being done within schools because the learners were advocating for more.

5.3. Conclusion of findings

Disaster management principles and practices were not effectively being tackled in most schools, as the educators and the principals probably did not have the required skills that would enable them to capacitate the learners. The knowledge content being covered does not have enough depth that would allow learners to comprehend all the disaster risk reduction aspects. Although learners would have managed to gain some knowledge on disaster management, the lack of drills in most schools could hinder the anticipated attitude and behavioural change in most learners. Therefore they will not be able to cause much positive change within the family and the community in terms of DRR and this would have a negative impact as the learners are the future leaders.

5.4. Recommendations for implementation/ suggestions for application of research

5.4.1. National level

The South African National Department of Education should advocate for and support the reassessment of the currently available curriculum to recognize gaps and techniques that might be utilised to incorporate DRR in a suitable way (UNICEF 2011:6).

5.4.2. KwaZulu-Natal Department of Education (provincial level/district level)

The KwaZulu-Natal (KZN) Department of Education should endorse curriculum reviews and adjustments. Re-examining the main and the core curriculum will enable the KZN Department of Education to establish gaps in relation to DRR. Incorporating DRR aspects in the curriculum would entail including knowledge of natural and man-made hazards, risk measurement, risk reduction and avoidance, disaster preparedness and response. The KZN Department of Education should make use of local understanding, practices and traditions to support the designing of DRR education resources for all age groups, which are user friendly within the school and community set-up (UNICEF 2011:13). Technical working groups such as the KZN Provincial Disaster Management Centre personnel could be utilized by the curriculum developers and the curriculum review committee as they will be able to make most effective recommendations (UNDP Pakistan 2010).

Disaster risk reduction content can fittingly be infused into all the natural science courses, geography, social studies, literature and language arts, and even mathematics. The content disseminated in this way, must of course be cautiously correlated in order to be balancing and for the learners to be able to appreciate it (Petal 2008:27).

The Department of Education should provide technical assistance where appropriate; promote links between the Amajuba District contingency plans and school preparedness plans (UNICEF 2011:13). This way the initiative will be highly appreciated and assimilated into the schools and communities.

The officials from the Amajuba District Department of Education should monitor the schools to ensure the implementation of emergency and fire procedures that are outlined within the amendment of South African Schools Act No 84 of 1996 on Regulations for safety measures at public schools.

Amajuba District could start up learners' competitions on DRR issues. Awards given to learners for their dedication towards disaster risk reduction within the school or the communities where they come from, recommendation made by experts from different fields such as environmentalists as well as disaster managers and media coverage of learners' work can make learners to realise that their effort is being recognized thus generating high levels of interest in learners' work, even more toward achieving their goals (Petal 2008:29; Petal & Izadkhah 2008).

The Amajuba District office can disseminate written materials on DRR issues such as pamphlets to schools, which can be handed over to learners to read during their own spare time. Posters and signage would have to be displayed on the school notice board as well as within each classroom for learners to peruse increasing chances of disaster risk reduction messages being shared (Petal 2008:29; Petal & Izadkhah 2008).

5.4.3. Schools and community level

The Amajuba District Department of Education office should facilitate the participation of learners, educators, school management team, parents as well as the community members in undertaking the vulnerability/capacity and multi-hazard evaluations, and classifying gaps in school level response capacity. This would lead to the establishment of the school emergency plans. Individual schools ought to come up with safety measures suitable for all the learners within. Taking into account the identified potentially threatening hazards the schools would have to then, set-up fundamental disaster measures, establish safe assembly areas within the school and provide for the protection of crucial paperwork (UNICEF 2011:20).

5.4.3.1. School disaster management plans

Schools should be actively involved in disaster management planning, which is a continuous and participatory process that includes school management team, students, local community, parents and external organisations in activities to enable them to become vehicles of change and development in promoting a culture of safety.

Evaluation and planning within the schools should start from the classification of hazards, vulnerabilities and risks, materials and capacities up to a dynamic plan to lessen these risks and an effective plan that illustrates the measures and response needed to be applied in cases of a disaster taking place. Schools must prepare a strategic safe place for the students and families to meet afterwards. Another important factor to consider would be for the continuation of education during recovery period (Petal 2008:16).

Each school should have a class evacuation plan, class evacuation route map, school evacuation route map as well as the map of the school surroundings. These would help prepare the school in the identification of the potential threats as well as identifying the safe place where learners could assemble after an emergency notification.

5.4.3.2. Communicating the plans

Every person involved in the project should be aware of the plans and developments in order for the team to function efficiently. The people in the community can represent human resource for the school disaster projects by taking part in response and recovery activities. It is also important to conduct meetings with the disaster management experts in society because they can help by offering their expertise. Many channels can be used to convey the information such as in written, audio and visual forms. Furthermore the information can be translated into the different languages which are in use within the schools, namely English, IsiZulu and Afrikaans so that everyone will understand (IFC2 s.a:14).

It is very important to note what kind of information is required by various groups of vulnerable people. For instance, a grade eight learner and a grade twelve learner may be involved in the same situation, but their needs are different because of their different ages and therefore they each may need rather different information to meet their diverse perceptions and everyday conditions. In addition, diversity in social groups, for example culture diversity also calls for different information channels or means (Izadkhah & Hosseini 2005:141).

The member of staff for each school should be aware of what the Department of Education expects from them, for example when there is a disaster they should know how to respond. The principals of the schools should ensure that everyone is aware of the ways the school would use

for notification of any programme to be implemented or for any emergency event that would have occurred, for example e-mail, school web page or notices on the bulletin board (IFC s.a:14).

5.4.3.3. Principals' duties

Principals would need to be trained so that they would have a better understanding of what disaster risk management entails and what their duties would be in ensuring that it becomes a part of the day to day running of the institution.

Principals should also monitor the inclusion of disaster risk management in both the main and core curriculum to ensure that the educators are implementing all the recommendations.

Principals would act as the commander in the event of a disaster occurrence, coordinating all the activities taking place to ensure that all the learners are evacuated within a short space of time.

5.4.3.4. Educator's role within the curriculum

Educators should ensure that learners acquire a basic appreciation of scientific concepts with a deeper level of systems thinking, such as knowledge of history and causes of climate change; knowledge of and ability to differentiate between certainties, uncertainties, risk and consequences of environmental degradation, disasters and climate change; knowledge of mitigation in addition to adaptation practices that can contribute to building resilience and sustainability; understanding of different interests that shape different responses to climate change and ability to critically judge the validity of these interests in relation to the public good (Anderson 2010:9).

Educators as part of the curriculum should be able to lead a class discussion with pupils in relation to the way how they might respond to a catastrophic event such as fire or a flood. Within this scenario there would be need to mention that it is normal to feel very frightened, worried or even physically sick during or after the occurrence of a disaster. Having learners talk about what they would do after an adversity to help themselves and their contemporaries feel less terrified and worried will help enlighten them. The learners can also discuss what they can do to help each other pass the time, and not to worry so much (Tezu s.a:25). The discussions would help learners be better prepared when faced with the disaster and there would be minimal chances of them being traumatised.

Educators should be able assist learners in the absence of a trained counsellor to deal with tension which follows after disaster linked shock and this could do well to learner's psychological and emotional well-being. Secure and organized schools with knowledgeable educators would be consequently essential to guaranteeing a thriving child-focused DRR (Back et al 2009:14).

Educators would have to make use of exhibitions by engaging guest presenters who are believable and appealing such as Amajuba District Disaster Management authorities, Newcastle Fire Services Department and South African Police services. Involvement of these guests can be more valuable when the mentor is friendly, welcoming and viewed confidently (Citizen Corps 2010:16).

5.4.3.5. Training principals and educators

Education personnel and master-trainers' skills in vulnerability and capacity assessment, multi-risk analysis and prevention, preparedness planning, disaster management and response would need to be improved. This can be achieved by incorporating DRR aspects in pre-service and in-service tuition for school management team, educators as well as the support staff (UNICEF 2011:12).

The KZN Department of Education ought to facilitate the build up of instruction modules which could be made use of at educators' training institutes to lecture the DRR curriculum to educators. This would entail the capacity building of the educators' training institutes and establishment of master guides and resource people who could coach other educators (ADPC 2008a:44). The educators as well as the principals would have to be trained in weighing up the risk, controlling risk aspects and giving psychological support to learners who might get affected during an emergency situation. The Amajuba District personnel should coordinate the DRR training and activities for school within different wards. These guides would be useful to educators who are currently in the school system. Educators should be motivated to attend all the workshops and in-service training programme.

Service Delivery Support Services (SDSS) section within the Department of Education should facilitate the training or workshops for educators so that they will be able to offer psycho-emotional support to learners after a disaster occurrence before the SDSS team arrives at the school.

5.4.3.6. Teaching and learning resources

Available instruction aids such as teaching manual, instructor's guides, life orientation textbooks, workbooks, student activities could be re-evaluated so that essential amendments would be made to pave way for the educator's effective delivery of the programme of study (UNDP Pakistan 2010). The schools would have to be well equipped with age appropriate resources that would motivate learners to want to learn more about disasters (Petal 2008:26).

Although Schools are considered only one of the several sites which offers opportunities for youth to be taught about natural hazards, other avenues would be offered through the Internet, radio, television documentaries and advertisements, magazines and other print media, movies and hazard education videos, public events such as agricultural shows and concerts, billboards and other signs; as well as personal discussion with individuals who are actually knowledgeable about some natural disaster after having exposed to a real situation (Dufty 2009:14). These could be

utilised to enhance school learning process as they promote learner's involvement in disaster preparedness activities (Citizen Corps 2010:16). Schools will have to take an active part in enlightening the learner to be on the lookout for these other helpful sources of disaster management information as they are helpful in increasing the learner's level of understanding.

5.4.3.7. Curriculum implementation within schools

The schools should use a regulated progression of education across GET and FET Phases by initiating with indispensable messages and then slotting in all segment of emergency management which are applicable within the school set-up namely preparedness, mitigation, response and recovery. Incorporate disaster preparedness education into other learning projects within school such as environmental education and sustainability, as well as in other subjects such as Life sciences and geography (Citizen Corps 2010:15). This would guarantee the long term emergence of a culture of safety, and enables learners to understand that in future major hydro-meteorological events such as tsunami and flooding are not supposed to result in the death of a family member, injury or source of revenue for the family's bread winner (Petal 2008:25).

The teaching of Earth and climate science would make greater impact when it is disseminated to learners as a component of a comprehensive package with disaster prevention and preparedness where the focal point would be all the identified locally relevant hazards (South Asia Disasters 2009:12).

5.4.3.8. Drills (behavioural change in learners)

Schools should make use of sensible preparedness responses by means of in and out of class mock-up and through experiential drills. The mock setting ought to assess the learners' skills levels and strengthen individual skills. When coupled with proper feedback, recurring rehearsal of the required skills will help strengthen the development of self-assurance essential to eventually lead to behavioural change within the learner (Citizen Corps 2010:16). The rationale behind carrying out drills would be to get ready for the unforeseen circumstances, hence the need for them to be treated as the actual disastrous scenario so that pupils would learn how to adapt (IFC2 s.a:38).

School drills should be customized depending on the hazards that have the potential of affecting both the school and the neighbouring communities where the learners reside. Every school would be expected to carry out not fewer than three fire and evacuation drills during the school calendar year in addition to at least one full simulation drill as the Amajuba District is found within the grassland biome where the chances of fire outbreaks are very high. The programme should be designed in such a way that for each drill that the learners do that a prior warning is given they would have to later on do another drill of the same type without being given any preceding announcement. This would be done in order to evaluate the learners' progress. All the weaknesses would be noted and recommendations made that would lead to the learners' skills being improved.

Drills would have to be tried to diverse circumstances as well as at different times of the day. For instance, doing them when the school principal is present, and when he is not there (IFC2 s.a:38).

Schools that have fire extinguishers should ensure that the learners know how to use them. They could hold some demonstrations at assembly with a dummy. Learners could be given fliers with some pictures indicating each of the steps to be taken.

Schools should ensure that all learners know their emergency evacuation procedures as well as the rules to be followed. They should practise the evacuation drills to ensure that all the learners know how to evacuate their classroom to the assembly point as well as from the school premises to their homes or a place of safety.

5.4.3.9. Children's clubs

Schools should play a leading role in ensuring that learners take an active part in clubs that deal with disaster management issues. Within the club, for instance learners could be able to scrutinize all the recently occurred local, provincial or national disasters, and then come up with an exhibition board where they would then educate their community members about the disaster and what they would have learnt from their studies. Learners' strength and weaknesses would be outlined and the educators or experts would be able to give them positive feedback. Within the clubs, girls who are at times comparatively more vulnerable than the boys would be instilled with skills that would enable them to become less susceptible (South Asia Disasters 2009:12). Children's clubs of any type that are run by children themselves or by adults can provide space for learning, discussion of risks to the community and training to ensure preparedness (Back et al 2009:26).

5.4.3.10. Example of flood awareness programme for learners

Learners could be given a task to research either from the parents or from the secondary sources the flood history of their communities. Learners would identify all the geographical features of the area where the school is located as this helps when identifying vulnerabilities.

Educators would create a preparedness programme for the learners on flood safety by working with relevant agencies in coming up with swimming competitions. Competitions would motivate some of the learners to want to perfect the skill resulting in them being well prepared. Learners would be taught how to swim as part of their sports or extra-curricular activity so that learners would be able to save themselves or help community members who would be drowning

Learners would discuss in class safety measures that could be implemented at their homes Learners would take the given measures to discuss with their families and implement them as they are or modify them to suit their family setting. The educator would assist learners to come up with family safe plans. As learners came from different backgrounds they would come with different ideas. Each learner would be able to design one that could be utilised by their families. The educator would assist the learners in perfecting his/her plans.

Health related information would be provided by health experts; especially on water borne diseases such as cholera caused by flood water, to learners, educators, ancillary members of school staff and parents.

Learners would identify safe areas in the community and come up with safe evacuation routes to be used for evacuation. Each family should have these maps showing the route and where they would meet. Learners would be given a task to bring up to date all the flood data and valuable emergency response methods so that they get acquainted and enthusiastically get ready (ADPC 2009:11).

5.4.3.11. Monitoring of learners' progress within the school

To ascertain the progress being made in terms gaining of knowledge about DRR amongst learners, questionnaires could be administered at different times. A school safety week might be performed at the conclusion of DRR knowledge dissemination phase (UNDP Pakistan 2010). Learners could also be given assignments in the form of a project which would be appropriate for their age groups.

5.4.3.12. Reaching out to the community

Schools should assign learners as a valuable driving force of change and key players in disaster risk reduction. This could be done by ensuring that learners were actively involved in the DRR programme in the school as well as the community set-up by means of child-centred methodologies complemented by activities, suitable to diverse age groups. Activate child-led, all-encompassing DRR programmes, fitting to learners' age and competence. Children should be given a chance to interact on their own with the aim of coming up with DRR plans of action for the school, family and the community (UNICEF 2011:22).

School-based disaster education programmes will have to be incorporated into other community disaster education programmes. Learners' outreach programmes might be advanced via joint ventures to enhance community-based preparedness consultations and actions. Outreach initiatives could be upheld by way of using the Newcastle Advertiser newspaper and the Newcastle community radio station as well as the annual parent, teacher and learner meetings that are held within schools.

The Amajuba District Department of Education cooperative governance section should facilitate the involvement of parents and community members in school-based DRR programmes. Connect the most susceptible and marginalised in the community and existing school structures such as the school governing board or school safety committees. Schools should be supported in their

endeavour to act as the hub for community risk reduction where anticipated performance is premeditated and accomplished with the contribution of learners, parents as well as other community members (UNICEF 2011:22).

5.5. Amajuba district disaster management centre involvement in schools

The Amajuba District Disaster Management Centre has to establish associations with schools with the intention of distributing information regarding disaster risk management and risk avoidance. As the schools do not have any programmes in place, the centre will have to assist in the establishment of these in schools with the centre of attention being on applicable and fitting phases of disaster risk management. The policy framework for disaster risk management in the Province of KwaZulu-Natal, stipulates that the disaster management centres are obliged to take an active part in ensuring that there are awareness creation programmes that are in place within schools. They will then have to monitor the continuity as well the progression being made in schools annually (KZN Provincial Gazette 2010:133). The Cooperate governance section within the Department of Education will have to assist the Amajuba District Disaster Management Centre officials by ensuring that the centre would not experience any form of resistance from schools when performing various activities relevant to the schools.

5.6. Other useful organisations

The schools are advised to facilitate the training of first aid, road safety, fire and evacuation drills for educators and learners as well as office-based personnel, this training could be offered by the Fire Department, South African Police Services and Department of Health in collaboration with the Amajuba District Disaster Management Centre (Sharma & Dey s.a:9). These organisations could be involved in drills to be done in schools where they can evaluate the progress being made and make recommendations related to changes or improvements that would need to be done for the drill to be perfect.

5.7. Summary of contributions

The research has shown that the schools are, to a lesser extent, taking into account the importance of disaster risk management principles and practices. This entails that the Department of Education has to make some adjustments within the school system so that schools operate in line with the recommendations of the South African Disaster Management Act No. 57 of 2002 as well as the policy Framework for Disaster Risk Management in the Province of KwaZulu-Natal.

5.8. Suggestions for further research

1. Determining whether school laboratories are equipped with fire fighting equipment.

2. Assessing the training needs of educators and principals regarding disaster management in the curriculum.

5.9. Conclusion

When the DRR concepts are well cascaded from the National Department of Education, through the KZN DoE, Amajuba District Office, and other crucial stakeholders, the learner will be capacitated resulting in the families and communities being well prepared for any eventuality. The chapter focused on the recommendations based on the practical implications of the study. As life orientation is a compulsory subject, with all the disaster management principles and practices incorporated into the subject, and if taught by well equipped educators, all the learners would be well prepared in terms of knowledge and skills. Hence, they could be able to pass on the knowledge and skills to their families and the communities where they live.

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7. Annextures PERMISSION LETTER



Enquiries: Sibusiso Alwar

Tel: 033 341 8610

Ref.: 2/4/8/106

Mr Goodwill Pasipamire PO Box 141662 Madadeni 2951

Dear Mr Pasipamire

PERMISSION TO CONDUCT RESEARCH IN THE KZN DoE INSTITUTIONS

Your application to conduct research entitled: **Investigating Disaster Management Importance in the High School Curriculum: A Case Study of the Amajuba District, South Africa,** in the KwaZulu-Natal Department of Education Institutions has been approved. The conditions of the approval are as follows:

- 1. The researcher will make all the arrangements concerning the research and interviews.
- 2. The researcher must ensure that Educator and learning programmes are not interrupted.
- 3. Interviews are not conducted during the time of writing examinations in schools.
- Learners, Educators, Schools and Institutions are not identifiable in any way from the results of the research.
- A copy of this letter is submitted to District Managers, Principals and Heads of Institutions where the intended research and interviews are to be conducted.
- 6. The period of investigation is limited to the period from 01 September 2011 to 31 September 2012.
- 7. Your research and interviews will be limited to the schools you have proposed and approved by the Head of Department. Please note that Principals, Educators, Departmental Officials and Learners are under no obligation to participate or assist you in your investigation.
- Should you wish to extend the period of your survey at the school(s), please contact Mr Alwar at the contact numbers below.
- Upon completion of the research, a brief summary of the findings, recommendations or a full report or dissertation or thesis must be submitted to the research office of the Department. Please address it to The Director-Resources Planning, Private Bag X9137, Pietermaritzburg, 3200.
- 10. Please note that your research and interviews will be limited be limited to the following Schools and Institutions:

10.1 Amajuba District Schools and Institutions

Nkosinathi SP Sishi, PhD

Head of Department: Education

2011 -07 - 28

Date

...dedicated to service and performance beyond the call of duty.

KWAZULU-NATAL DEPARTMENT OF EDUCATION

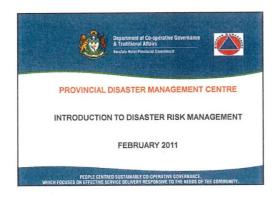
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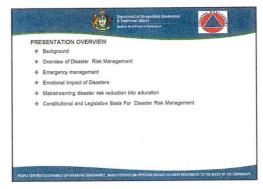
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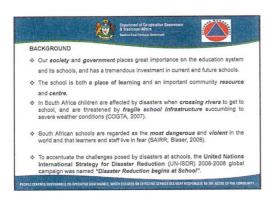
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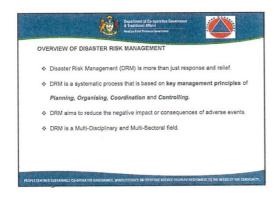
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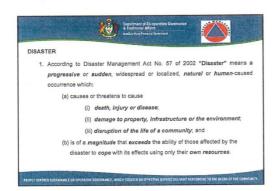




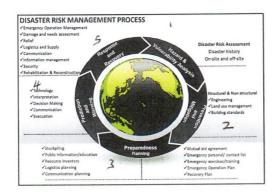


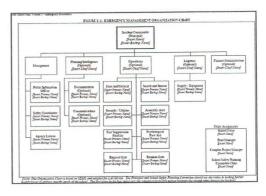


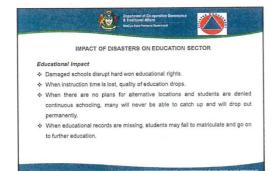


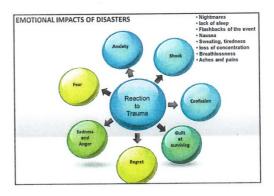


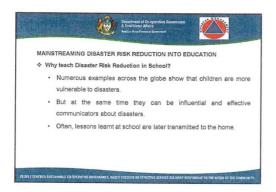




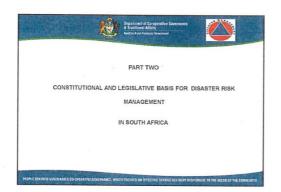




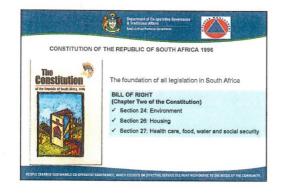




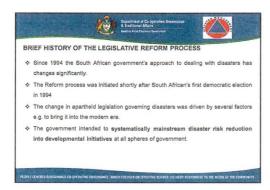




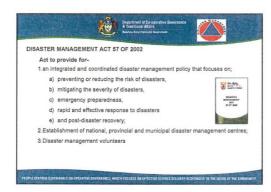


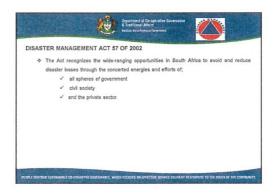


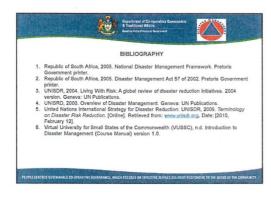














INTERVIEW QUESTIONS FOR HIGH SCHOOL PRINCIPAL

Name of the School	

INTRODUCTION

I am a Masters Student at the University of the Free State conducting a research in the Amajuba District High Schools. The study focuses on assessing the extent to which disaster management principles and practices are part of the high school curriculum. The collected data will be kept strictly confidential while the findings will be utilised for academic purposes only. Thus I request that you give honest answers for all the given questions.

QUESTIONS

- 1. Are you aware of the existence of the South African Disaster Management Act No 57 of 2002?
- 2. Are you aware of the existence of the Policy framework for Disaster risk management in South Africa?
- 3. If Yes, when coordinating and monitoring the day to day teaching and learning do you take into account the recommendations in the Policy framework for Disaster risk management in South Africa?
- 4. Are there any hazards that have affected your school? If yes, please specify...
- 5. Have you attended any advisory forum where disaster management concepts related to the curriculum are discussed?
- 5.1. If Yes, give a brief overview of the issues discussed
- **6.** To what extent do you coordinate with local organisation on matters relating to emergency preparedness?
- 7. Do you invite some external organisations to educate learners and teachers in relation to disasters?
- 7.1. If yes, specify which organisations?.....
- 7.2. Briefly describe some of the activities that are carried out by the organisation(s) within the school
- 8. Is there a school disaster management committee?
- 8.1. Are you a member of the committee?
- 8.2. If Yes, what position do you hold within the committee?
- 8.3. Who are the other stakeholders?
- 9. Do you think the committee members have enough skills to lead?
- 10. Is the school Disaster Management Plan prepared and kept updated? How often is the Disaster management plan updated?
- 11. What is encompassed within the school disaster management plan?
- 12. In the disaster management plan is there a communication plan that includes a list of who to contact for specific type of emergencies?
- 12.1. Is the disaster management plan communicated to the educators, learners as well as their parents?
- 12.2. What method do you use to notify learners and educators of an emergence?
- 13. Do you have the school and surrounding community maps? If yes are the evacuation routes and locations noticeable?
- 14. Please explain the your **duties** in the event of an emergency
- 15. Have there been practical drills for each hazard type within the past year?
- 16. Do you have proper equipment to use in case of an emergency?

- If Yes, give examples
- **17.** To what extent are the students' parents involved in disaster preparedness and training within the school?
- **18.** Is there a programme in place whereby the school reaches out to the community on issues related to disaster management?
 - If yes, please give a brief outline of the concepts covered within the programme

Thank you for co-operation and spending your time answering the questions.

INTERVIEW FOR THE LIFE ORIENTATION EDUCATOR

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Name of the School

I am a Masters Student at the University of the Free State conducting a research in the Amajuba District High Schools. The study focuses on assessing the extent to which disaster management principles and practices are part of the high school curriculum. The collected data will be kept strictly confidential while the findings will be utilised for academic purposes only. Thus I request that you give honest answers for all the given questions.

QUESTIONS

- 1. Are you aware of the existence of the South African Disaster Management Act No. 57 of 2002?
- 2. Are you aware of any hazards that affect/affected the local community? If yes, please specify.......
- 3. Have you ever faced an emergency situation at school?
- 4. Are there subjects where natural disasters are taught as part of the curriculum? If yes, specify
- 5. In which grade(s) do you cover concepts about disasters?
- 6. Give a brief outline of concepts covered within the curriculum that relate to disaster management?
- 7. Are the learners involved in participatory vulnerability assessment activities? If yes please, give a brief outline
- 8. How do you ensure that learners are prepared for any disaster?
- 9. What strategies are used by the learners to ensure DRR within the school?
- 10. Do your learners write assignments related to disasters management? If yes, on what aspects do you test them
- 11. What do you think about incorporating disaster management concepts in the examination written by learners in all grades at High school level?
- 12. Are there others methods used for monitoring learner's progress to ensure that there are changes in the learner's behaviour, attitudes and perception towards disaster issues?
- 13. What is your learner's competence to understanding disaster management issues?
- 14. Do you offer extra-curricula activities related to disaster management? If yes, give a brief description of the activities
- 15. Are there mock drills that are done in school to capacitate the learners? If yes please explain.....
 - How many times are they done within the school calendar year?
- 16. How do you ensure learners play an active role in disaster management within the communities they come from?
- 17. What resources do used to impart knowledge on disaster management?
- 18. Do you feel there are enough and most effective resources to ensure that all learners are well prepared?
 - IF no, specify the kind of resources that you think would be crucial for learners to be prepared?
- 19. Do you think the Life Orientation curriculum is covering enough concepts to ensure that the learners are well prepared in the event of a hazard/disaster occurring?
- 21. Do you think you are well prepared to teach disaster risk reduction concepts to learners?

- If No explain why?
- 22. Do you get any assistance from any external organisation on matters concerning disaster preparedness?
 - If Yes, name the organisations and briefly describe the kind of assistance offered
- 23. Do you think inviting local disaster management personnel, fire fighters or police to do some practical drills will be of any significance to the disaster preparedness education at your school?
- 24. Have you been formally taught how to impart disaster management knowledge to learners? If yes, where did you get the training from?
- 25. Have you attended any workshops related to disaster management?
- 25.1. If yes briefly outline things covered within the workshop
- 25.2. Who was responsible for organising the workshop?
- 25.3. Did you benefit from the workshop(s)? Explain...
- 25.4. Have you managed to implement any concept related to the workshops attended?
- 25.5. If Yes, please explain.....
- 26. Will training programmes covering specific aspects or in totality of disaster management be of interest to you? Please elaborate......

Thank you for cooperation and spending your time answering these questions.

FOCUS GROUP INTERVIEW FOR EDUCATORS

Name of the School

INTRODUCTION

Welcome and thank you for taking the time to join us in discussing high school disaster management education. I am a Masters Student at the University of the Free State conducting a research in the Amajuba District High Schools. The study focuses on assessing the extent to which disaster management principles and practices are part of the high school curriculum. The collected data will be kept strictly confidential while the findings will be utilised for academic purposes only. Thus there is need to give honest answers for all the given questions. Please feel free to share your views even if they differ from other participants

- 1. What is the importance of incorporating DRR within the curriculum? Lets discuss
- 2. Has any one of you ever conducted an evacuation or fire fighting drill? IF no, can you please state the reasons for not doing them? If yes, during what time of the day does the school practice fire and evacuation drills? What were your experiences during an evacuation or fire fighting drill, let's discuss.
- 3. Are educators are well prepared to teach disaster risk reduction concepts to learners? Lets discuss
- 4. Do you think all educators are prepared to offer extra curricular activities on school safety? Lets discuss
 - If yes specify the ones you can offer.....
 - If No state the reasons for failing to conduct the activities
- 5. What training programmes or workshops would equip you with the skills necessary for you to impart disaster management knowledge to the learners as well as the community?
- 6. Do you feel there are enough and most effective resources to ensure that all learners are well prepared? Lets discuss.
 - IF no, specify the kind of resources that you think would be crucial for learners to be prepared?
- 7. What do you think about incorporating disaster management concepts as part of examinations?
- 8. Is the main curriculum covering enough concepts to ensure that the learners are well prepared in the event of a hazard/disaster occurring?
- 9. Do you feel about disaster management concepts should be incorporated in other subject areas?
- 10. Is it really essential to teach disaster preparedness and response to high school learners?
- 11. After learners have acquired disaster risk reduction skills how is the community benefiting?
- 12. What do you feel should be done to ensure that all the learners and educators understand the importance of undertaking DRR measures within the school and the communities they come from?
- 13. Do you think the school inviting local disaster management personnel, fire fighters or police to do some practical drills will be of any significance to the disaster education?
- 14. Do you think the school is actively involved in the community emergency disaster risk reduction activities?

INTERVIEW QUESTIONS FOR THE AMAJUBA DEPARTMENT OF EDUCATION SUBJECT ADVISOR

Name of the School

MASAKHANE

INTRODUCTION

I am a Masters Student at the University of the Free State conducting a research in the Amajuba District High Schools. The study focuses on assessing the extent to which disaster management principles and practices are part of the high school curriculum. The collected data will be kept strictly confidential while the findings will be utilised for academic purposes only. Thus there is need to give honest answers for all the given questions.

- 1. Are you aware of the existence of the South African Disaster Management Act?
- 2. Are you aware of the existence of the Policy framework for Disaster risk management in South Africa?
- 3. If yes, when formulating the curriculum do you take into consideration the recommendations in the Policy framework for disaster risk management in South Africa?
- 4. Are there any hazards that have affected the schools in the District? If Yes, please specify.....
- 5. Is there a District emergency preparedness and response coordinator?
- 6. Is there a District Emergency Preparedness Plan for Schools?
- 7. Are the educators well prepared to teach concepts involving disaster management?
- **8.** Are there any workshops which empower the educators being conducted within the ward?
- **9.** Are High School principals aware of the time they have to wait before the local fire fighters, police, or emergency medical services get to their schools after making an emergency call?
- **10.** Are Educators trained or workshopped to carry out disaster management issues? If yes, please give a brief outline
- **11.** Do you think the schools in the ward are well prepared in terms of planning, drill/exercises as well as training?
- **12.** What kind of support services does your office provides to schools within the ward as assistance in emergency preparedness and response?
- 13. What are the ways used to supervise emergency preparedness practices in schools?
- 14. What are the emergency events you feel the schools are not prepared to handle in the event of their occurrence?
- 15. What are the working relations with the Amajuba Disaster Management Centre?
- 16. Is there any other organisation that you work with on issues of Emergency Preparedness within the schools?
 - If Yes specify and explain the kind of assistance offered
- 17. Are there any competitions or incentives for learners that are promoted so as to instil a culture of disaster risk avoidance within the schools?
- 18. In the event of a disaster affecting a school are there plans in place to ensure the continuation of the teaching and learning?
 If yes please, give a brief outline.

Thank you for cooperation and spending your time answering the questions.

INTERVIEW QUESTIONS AMAJUBA DISASTER MANAGEMENT PERSONEL

INTRODUCTION

I am a Masters Student at the University of the Free State conducting a research in the Amajuba District High Schools. The study focuses on assessing the extent to which disaster management principles and practices are part of the high school curriculum. The collected data will be kept strictly confidential while the findings will be utilised for academic purposes only. Thus there is need to give honest answers for all the given questions.

- 1. To what extent are you promoting disaster management capacity building, training and education within schools?
- 2. Do you offer any advice and guidance regarding disaster management to the schools? If yes, can you please give a brief outline......
- 3. Are there any formal or informal initiatives you promote that encourage risk avoidance behaviour within schools?
- 4. Do the local emergency services have the maps of all the school structures in their control?
- 5. Do you have any programs that assist educators in promoting a culture of risk avoidance?
- 6. Do you offer assistance to educators in terms of disaster management education resources?
- 7. Do you visit schools to educate learners about disaster management? If Yes how often per year?
- 8. Do you do any drills within schools?
- 9. Do you monitor the disaster risk management programmes that take place within schools?
- 10. Is there a program to assess any training and resource needs to check on the shortcomings within schools?
- 11. Do you think high school learners are well prepared for any emergency situation?
- 12. If no what do you think need to be done to make all high school learners prepared for any emergency situation?
- 13. Are there any competitions or incentives for learners that are promoted so as to instil a culture of disaster risk avoidance within the schools?

Thank you for cooperation and spending your time answering the questions.

PARENTAL CONSENT FORM

RESEARCH TITLE

Investigating disaster management importance in high schools curriculum: a case study of Amajuba District, South Africa

We are asking for the consent of your child to take part in a research study being conducted by Goodwill Pasipamire a Masters student with the University of the Free State. The participation of your child in this research study is voluntary. You may read the information below and seek clarification on anything you do not understand before making a decision.

PURPOSE OF THE STUDY

- ❖ To assess the extent to which Disaster Management principles and practices are being implemented by the stakeholders in public high schools curriculum.
- ❖ To assess the knowledge, of learners in relation to Disaster Management issues in their curriculum.
- To assess the attitude and behaviour of the learners after learning about disaster management

DURATION OF THE STUDY

It will take approximately 20 minutes for your child to fill in the questionnaire and this will take place at their schools.

PROCEDURE TO BE FOLLOWED

If you allow your child to participate in this study, we will ask your child to respond to a set of question on the questionnaire.

DEALING WITH EMOTIONAL FEELINGS

The study will be carried out with the assistance of the Life Orientation Educator who will take care of any emotional issues that may arise when the child is responding to the questions.

CONFIDENTIALITY.

Personal identity of your child will not be exposed as they will not write their names on the questionnaire. After answering the questions the learners will place the questionnaire in the box without directly handing over to the person involved. When the results are published your child's identity will remain private.

IDENTITY OF THE RESEARCHER

Signature of the Researcher

If you have any questions that need to be contact details are:	e made clear please feel free to contact one us. Our
Goodwill Pasipamire (Researcher)	Olivia Kunguma (Research Study Leader)
078 399 8507	051 401 9699
SIGNATURE	
•	our child to participate in this research study. By signing mation written above and you are allowing your child to
Name of the Learner	
Signature of the Parent/Guardian	Date

Date

CONSENT TO PARTICIPATE IN RESEARCH

RESEARCH TITLE

Investigating disaster management importance in high schools curriculum: a case study of Amajuba District, South Africa

We are inviting you to take part in the research study being conducted by Goodwill Pasipamire a Masters student with the University of the Free State. Your involvement in this research study is voluntary. You may read the information below and seek clarification on anything you do not understand before making a decision.

PURPOSE OF THE STUDY

- ❖ To assess the extent to which Disaster Management principles and practices are being implemented by the stakeholders in public high schools curriculum.
- ❖ To assess the knowledge, of learners in relation to Disaster Management issues in their curriculum.
- To assess the attitude and behaviour of the learners after learning about disaster management

DURATION OF THE STUDY

It will take approximately 20 minutes for you to fill in the questionnaire and this will take place at your schools.

PROCEDURE TO BE FOLLOWED

If you choose to participate in this study, we will ask you to respond to a set of question on the questionnaire.

DEALING WITH EMOTIONAL FEELINGS

The study will be carried out with the assistance of the guidance and counselling Educator who will take care of any emotional issues that may arise when you are responding to the questions.

CONFIDENTIALITY.

Your personal identity will not be exposed as you will not write your names on the questionnaire. After answering the questions you will place the questionnaire in the box without directly handing over to the person involved. When the results are published your identity will remain private.

IDENTITY OF THE RESEARCHER

contact details are:	
Goodwill Pasipamire (Researcher)	Olivia Kunguma (Research Study Leader)
078 399 8507	051 401 9699
SIGNATURE OF THE LEARNER	
I have read the above information and have	e been satisfied with the given conditions.
Name of the Learner	
Signature of the Learner	Date
SIGNATURE OF THE RESEARCHER	
	
Signature of the Researcher	Date

If you have any questions that need to be made clear please feel free to contact one us. Our

TERMS TO ASSIST HIGH SCHOOL LEARNERS

- Disaster means a progressive or unexpected event caused by human beings or natural processes which could result in human beings and animals being affected by diseases, getting injured or dying. Property and the environment could also be destroyed and as a result the life within the society would be disturbed.
- Evacuation is the process where a person moves out of an area under threat to a safe place or assembly point during an emergency situation
- ❖ Hazard is a potentially damaging event that may cause damage to property, environmental degradation, injury or death of human beings and animals, disturbance of the social and economic system within the area.
- Mock drills are activities done imitating the way how people will have to react to an emergency situation such as a fire or bomb threat.

QUESTIONNAIRE FOR HIGH SCHOOL LEARNERS

INTRODUCTION

I am a Student at the University of the Free State conducting a research in the Amajuba District High Schools. The study focuses on assessing the knowledge, attitudes, as well as behaviour of learners in relation to Disaster Management which form part of the school curriculum. The collected data will be kept strictly confidentially while the findings will be utilised for academic purposes only. Thus there is need to give honest answers for all the given questions.

Objectives

- ❖ To assess the extent to which Disaster Management principles and practices are being implemented by the stakeholders in public high schools curriculum.
- ❖ To assess the knowledge, of learners in relation to Disaster Management issues in their curriculum.
- ❖ To assess the attitude and behaviour of the learners after learning about disaster management

School Name:
ding to the questions
hazards are you aware of? (you can tick mo

Please tick in an appropriate box when

2. Indicate your age _____

4. Do you know what a hazard is?

SOCIO-DEMOGRAPHY

3. Current Grade

DISASTER KNOWLEDGE

1. Gender:

		YES	NO
4.	Floods		
5.	Snow		
6.	Drought		
7.	Tropical cyclone		
8.	Tsunami		
9	HIV		
9.	Fires		
20.	None		
21.	Others (Please		

	specify	
Where 23 24 25 26 27 28	School Television Radio Internet	vents from? (you can tick more than one) ES NO
hazards 1 Lif 2 Lif 3 Pr 4 Ge 5 Er 6 isi 7 To 8 Ot		I, which subject in school did you learn about these
1 1 2 1 3 1 4 (Grade is the topic off flaza 10 11 12 Other (Please specify	rus covereu:
1) Si 2) Be 3) Lo 4) Ot	ren ell oud speaker thers	ed to notify you of an emergency within the school?
32. Do you 1) Ye 2) No		our school?

33.	Do	you	know	how	to	use	the	fire	ext	ingu	iisl	ner	•
	1)	Ye	s		1								

	2)	No							
	If	yes	specify	the	basic	procedure	to	be	followed
EARI.	NER'	S ATTITUI	DE					-	
	Doy	ou have a	disaster pre	parednes	s plan as a	:			
	34. 35. 36.	Class Family Communit		NO NC	OT IRE				
37.	Is th	iere an eva	cuation rout	e plan in y	your class i	f in case any disa	aster oc	curs?	
	1) 2)	Yes							
38.	1) 2)	/ou know the Yes No Ves, specify	ne rules of b	uilding ev	acuation?				
39.	1) 2)	Yes				disaster (e.g. fir	·	s at schoo	ol?
40.	1) 2)	Yes No	vhat to do in		-	cy that happens	when yo	ou are at	home?
41.	Do y	you know w Yes	vhat to do in	the event	of a disast	er occurring in y	our con	nmunity	

	If yes specify			
42.	Do you think you know what to do in 1) Yes 2) No Specify			
	Tick the emergency numbers that y	ou have at home		
	 43. Police 44. Ambulance 45. Fire department 46. Amajuba Disaster Management Centre 47. Others (Please specify	YES NO		
	Where do you know these numbers	s from?		
48.	Will you be able to offer assistance 1) Yes 2) No	during or after a dis	easter	
49.	If yes to 48, what kind of assistance Informing Amajuba Disaster Notes that Centre Centre Carrying the property to a safe and Informing the community ment respond Others (Please specify)	Management e place		
50.	Do you think disaster education at s 1) Yes 2) No 3) Undecided	school helps you to	get prepared for an	y disaster event?
51. 「	I think learning about disasters at semy daily life. 1) 2) Strongly agree Agree	chool is important b 3) Neutral	ecause I can use th 4) Disagree	5) Strongly disagree

52.	What do you think your school or educators should do to enable you to have a more understanding of Disaster Management?
	Which of the following have provided you with useful information to help you to be prepared for any disaster (you can tick more than one)
	53. Personal experience with one or more hazard 54. Newspaper 55. Community meetings on disaster preparedness 56. School 57. Others Specify
LEARI	NER'S BEHAVIOUR
58.	Have you attended any drills at School? 1) Yes 2) No
	If Yes tick from the list below, the drills for hazards done at school
F	YES NO
	59 Floods 60 Fire
	61 First Aid
	62 Classroom evacuation
	63 Others (Please specify)
64.	How many times have you done the drills?
	1) Once a year
	2) Twice a year 3) Three times a year
	4) Four times a year
	5) Others (Please specify
65.	Have you ever shared the information you learnt about disaster preparedness with anyone? 1) Yes 2) No
	If Yes Tick from the list below, those you have shared the information with
	YES NO 66. Parents 67. Brothers

68.	Sisters	
69.	Friends	
70.	Neighbours	
71.	Community leaders	
72.	Others (Please	
	specify)	

Thank you for cooperation and spending your time completing the questionnaire.